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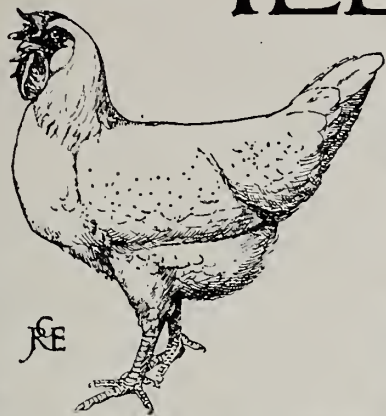
LONG TAILED YOKOHAMA
AND THE
TAILESS BANTAM.

HEAVILY FEATHERED
COCHIN-CHINA
AND THE
FEATHERLESS SILKIE
BANTAM.



EXTREMES IN POULTRY

THE ILLUSTRATED POULTRY RECORD



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DIARY OF THE MONTH.

EDITORIAL NOTICES.

Telegrams: "CHICKENDOM." Telephone: 1999 P.O. CITY.

The Editor will be glad to consider any MSS., photographs, or sketches submitted to him, but they should be accompanied by stamped addressed envelopes for return if unsuitable. In case of loss or injury he cannot hold himself responsible for MSS., photographs, or sketches, and publication in THE ILLUSTRATED POULTRY RECORD can alone be taken as evidence of acceptance. The name and address of the owner should be placed on the back of all pictures and MSS. All rights of reproduction and translation are reserved.

The Editor will be glad to hear from readers on any Poultry Topics, and all Queries addressed to the paper will be answered by experts in the several departments. The desire is to help those who are in any difficulty regarding the management of their poultry and accordingly no charge for answering such queries is made.

The Annual Subscription to THE ILLUSTRATED POULTRY RECORD at home and abroad is 8s., including postage, except to Canada, in which case it is 7s. Cheques and P.O.O. should be made payable to Brown, Dobson, and Co., Limited.

THE ILLUSTRATED POULTRY RECORD is published on the first of every month. Should readers experience any difficulty in securing their copies promptly they are requested to communicate immediately with the Editor.

A Year's Review.

That the poultry industry is making a steady progress in every part of the world is evident and that in the United Kingdom it is growing rapidly cannot be questioned. It is well, therefore, to look backward as well as forward at given intervals, and for this no better season can be chosen than the beginning of the year. This is done by Mr. Edward Brown, F.L.S., in the Annual Review issued for many years in the month of January. As it has already appeared in our contemporaries we do not publish it, especially as the statistics are thrown into another form in the present issue of THE ILLUSTRATED POULTRY RECORD. It notes with satisfaction the taking of a Poultry Census last June, the publication of which we are looking forward to with deep interest, and that the Irish Department of Agriculture has commenced the annual record of exports and imports, to which we called special attention in our October number. The action of the Secretary of State for Scotland in appointing a Departmental Committee on Poultry-breeding is commended; the importance of advanced instruction and experimental work was emphasised by the Reay Report published in August last. References are made to the need for meeting the new conditions arising from the extension of small holdings, and it is stated that prices for eggs and poultry have been higher than ever before. With respect to the statistics which form a special feature in Mr. Brown's survey, the imports of eggs have decreased by 42,939,720, as compared with 1907, but average prices have advanced by 2½d. per 120. In 1898 the import values were 5s. 10d. per great hundred, and in 1908 7s. 10½d., which is indeed

remarkable. An estimate is made of the total consumption last year—namely: Eggs, £15,735,530; poultry, £4,553,847—total, £20,289,377, of which £8,039,677 were foreign, £4,000,000 Irish, and £8,250,000 British. A complete copy of this interesting report can be obtained from the National Poultry Organisation Society, 12, Hanover Square, W.

Export of Breeding Stock.

The annual statistics for 1908 record that the value of poultry exported during the year was £21,423. While this is stated to be for birds alive and dead, we may assume that it is practically all breeding stock. If correct, which may be doubted, that result is a very serious reflection upon British breeders, who ought to be able to multiply the amount five if not tenfold if they set themselves to do so. That will not, however, be accomplished without determined and steady effort on their part, and they must abandon the insular and supine methods which have hitherto prevailed. Business in these days is not secured by a waiting policy. It must be catered for, be sought after. The first step is publicity, to which end we hope the advertisement columns of THE ILLUSTRATED POULTRY RECORD will be the means of serving breeders on the one hand and intending purchasers on the other. Our steadily-increasing circulation in the colonies and foreign countries gives an opportunity which has not hitherto been available. That, however, is not all. So far as colonial buyers are concerned, the language problem does not exist, but an enormous amount of trade has been lost with foreign countries because there is no systematic attempt to meet the needs of possible customers by corresponding in a language which they can understand. Many complaints have been made abroad in this direction. Upon that question we hope to say more at an early date, and, if possible, suggest a scheme by which a better condition of things may be evolved. There is one point further which is of considerable importance, namely, that the day of the demand for a few high priced specimens has largely passed. Probably there will always be sale for a few such for exhibition purposes, but the bulk of the trade will be in typical birds at moderate prices, and vendors must give adequate value for money paid, which has not always been the case hitherto. With our reputation for high-class stock and our transit facilities, the trade is there to be done.

Fancy and Utility.

An earnest desire on the part of the Editor of THE ILLUSTRATED POULTRY RECORD is to do something to further the aims and objects of poultry-breeders of all grades and classes. This is expressed by the subtitle given to this paragraph. Instead of *or* we have

used the word *and*. There can be no question that with the rise of the poultry industry a great cleavage has arisen between the fancier and the practical breeder. At one time the former was the dominant factor. That is no longer the case; in fact, his contribution to the industry is relatively small, and the tendency is for fancy poultry-breeding to pass into fewer hands. That is becoming apparent elsewhere. Much of this cleavage is due to the fact that fanciers have ignored, or try to ignore, utility men, especially in relation to types and standards. The ideal state of things would be that both classes should be working to the same end, one by special attention to racial characters, the other to economic qualities, but each working cordially and sympathetically with the other, taking no step which is antagonistic to the general good. How far we are from that stage of things is evident. What we have to consider is whether anything can be done to secure unity instead of opposition; we mean unity of ideal and action. The task will not be easy of accomplishment, but it is worth attempting. As a suggestion to that end we show below the first steps to be taken, combined with a willingness to recognise the opposite position.

FANCIERS.

1. Must be prepared to bring standards into conformity with practical breeding.
2. Must not adopt points or characters antagonistic to economic qualities.
3. Must be ready to abandon abnormal developments unless they are first proved to be injurious.
4. Must give greater weight to type than to coloration, &c., and
5. Must be prepared to abandon double mating.

UTILITARIANS.

1. Must co-operate to maintain purity of race of the breeds kept.
2. Must co-ordinate the development of external characters and economic qualities.
3. Must not object to secondary characters which are not proved to be injurious.

It need hardly be said that the above do not apply to Bantams and purely ornamental breeds.

Scottish Departmental Committee.

Towards the end of December the reference of the Departmental Committee on Poultry Breeding in the Highlands and Islands of Scotland was extended so as to include the whole of Scotland, and as a result the committee, during the last few weeks of the old year and the first of 1909, have been touring in the southern counties. Unfortunately, Mr. James Murray, M.P., the chairman, has been suffering from Parliamentary breakdown, and has therefore been unable to accompany the committee, but it is confidently hoped that he will have recovered before the report stage is reached. To facilitate the work the committee divided into two parties, one going south-west

from Glasgow, and visiting the counties of Lanark, Renfrew, Ayr, Wigtown, Kirkcudbright, and Dumfries, and the market at Carlisle; the other travelling north-east from the same centre to the counties of Stirling, Perth, and Fife, and later south-east to Haddingtonshire and Berwickshire. Both sections of the committee came in for their share of the bad weather experienced during the closing days of 1908, but fortunately they were not completely snowed up. It is too early as yet to indicate the exact line which the inquiry has taken or what evidence has been led, but the mass of information collected must have been great, owing partly to the varying climatic conditions in such places as Shetland and Lanark, Lewis and Fife, Caithness and Berwickshire, and partly to the distance of the different centres from suitable markets. Ireland has responded to the efforts of her Board of Agriculture by an increased export of eggs and poultry, and it is to be hoped that if the Congested Districts Board and the Board of Agriculture carry out any scheme for the encouragement of the poultry industry in Scotland, it will produce similar results to those achieved in Ireland.

The Law of Averages.

The question raised in an article which we publish this month on "Poultry-Breeding: Problematical and Possible," by Mr. Edward Brown, F.L.S., has not hitherto received the attention it deserves from those engaged in the economic development of our races of poultry. Fanciers have to some extent applied this principle, perhaps unconsciously. Selection for the show pen, dealing with coloration and other external characters, has had the effect in most breeds of raising the exhibition averages, so much so that in order to obtain this result, one necessary for success, inbreeding has been carried to the point of danger and a large measure of enfeeblement has followed. The utility breeder cannot afford to do so, but with the rigid application of trap-nesting, and especially using as breeding stock immature and forced specimens, the risks of loss of vigour are considerable. This would be to a large extent avoided if the law of averages were constantly kept in view, for then progression would be by steps instead of leaps, and virility would be more likely to be kept to the fore. Without the latter all our efforts will be in vain and any gain secured will be transient. The fact is that the 200-egg hen, if ever it is reached for large flocks, will only be after many years of constant breeding, and there will be many more grey hairs ere it is accomplished. We do not say this to discourage those who are striving for improvement in that direction, but to indicate that the process of evolution must be gradual.

Prohibited Imports.

As a consequence of the prevalence of foot and mouth disease among stock in some sections of the United States, the Canadian Government has absolutely prohibited admission into the Dominion of live stock, including dogs and poultry, which have originated in or passed through the States of Michigan, New York, Pennsylvania, New Jersey, Delaware or Maryland, and these regulations apply to purchased birds or exhibits. Canadian exhibitors could forward specimens to the American shows within the area named, but could not receive them back again. How far a prohibition like this can be applied is questionable. For instance, while exhibits at New York might not enter Canada, those at Boston can do so, and with the vast extent of territory evasions seem both possible and probable. The important point is, why should poultry be included, for we have no evidence that they either suffer themselves from, or are the medium for spreading foot and mouth disease. If the Canadian authorities have evidence in that direction, this should be made public in the interests of poultry breeders and stock raisers.

Accelerated Progress in the Irish Poultry Industry.

It will be remembered that in our first issue (October, 1908) statistics were given as to Irish exports and imports of poultry produce for 1906. The issue of the report for the year ending December 31, 1907, brings this record to a later date, though why it is twelve months belated is difficult to see. The following are the comparative figures with those of 1906:

	1906.		EGGS. 1907.		Increase +	
	Gt. hd.	£	Gt. hd.	£	Gt. hd.	£
Exports	6,494,532	2,760,176	6,675,599	2,920,539	+181,067	+160,363
Imports	99,755	37,408	103,107	41,036	+ 3,352	+ 3,628
Parcel Post..	—	25,000	—	25,000	—	—
	6,594,287	2,822,584	6,778,706	2,986,575	+184,419	+163,991

	POULTRY.				Increase +	
	cwt.	£	cwt.	£	cwt.	£
Exports	305,420	855,176	302,588	847,247	— 2,832	— 7,929
Imports	19,968	15,974	22,159	17,727	+ 2,191	+ 1,753
Parcel Post..	—	9,000	—	9,000	—	—
	325,388	880,150	324,747	873,974	— 641	— 6,176

	FEATHERS.				Increase +	
	cwt.	£	cwt.	£	cwt.	£
Exports	19,843	59,529	20,954	62,862	+ 1,111	+ 3,333

From the above it will be seen that there is a considerable increase in the trade in eggs and a slight decrease in that of poultry, and that the net increase of values is £160,148. The average value of eggs exported in 1906 was 8s. 7½d. per gt. hd., and in 1907 8s. 9d. per gt. hd. The total values of the Irish poultry exports in 1907 were:

Eggs.....	£2,945,539
Poultry.....	855,247
Feathers	62,862
	£3,864,648

If we add the home consumption, the value of the poultry industry to Ireland, apart from imports, must be at least four and a quarter million pounds sterling. The report contains an excellent diagram showing the supplies each month both of Irish and foreign eggs.

The New-laid Egg.

So far as we are aware there is no legal definition of the new-laid egg. Ideas vary considerably upon that point; it depends upon the notions of the vendor. The requirement is that eggs shall be milky, by which is meant that they shall not exceed three days old in summer and five days in winter. We question, however, whether this definition would be accepted in a court of law.

The Cold Snap at Christmas.

The sudden snap of Arctic weather which visited the country for a few days immediately after Christmas had the most disastrous effects on the poultry yards. Nearly every part of the kingdom was snowed under, and the severity of the frost was such as to spell a serious set-back to those who had already mated their breeding pens. In the Thames Valley, where the accompanying photographs were taken, the visitation was not less unwelcome than elsewhere, and at a farm we know, within a few miles of London, several of the stock birds are showing the effects of their nipping more than a fortnight later in blackened combs and wattles and loss of



AFTER THE SNOWSTORM.

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Prosecutions have been successful in some of the States of the American Union, notably in the District of Columbia and the State of Kansas. In both places eggs sold as strictly fresh, which is the American designation for new-laid, were found to be stale, and we imagine that our own laws would sustain anyone who took action under similar circumstances. Hitherto prosecutions have practically been confined to the attempted sale of eggs unfit for human food. Where the misleading terms are used, it really amounts to obtaining money under false pretences, but without a definition of terms proof is often difficult. It would certainly be of benefit if we could obtain clear grades in respect to age and quality; benefit, that is, to the home producer.

plumage colour; while as to the chicks, those only were fortunate which waited till January 1, when the warmer weather had begun, before hatching out. A more unlucky opening to the breeding season could scarcely be imagined, and those who were congratulating themselves on the prospect of seasoning a good number of early chickens can only console themselves with the reflection that the calamity would have been worse if it had lasted a few days longer.

Our Prize Drawing Competition,

Which closed on December 31, resulted in a victory for Mr. Exley, whose study of Silver Grey Dorkings will be published as a frontispiece to the next issue. The number of entries far exceeded our expectations,

and as there were several excellent drawings sent in the final selection was rather difficult to make. On the whole, however, we are satisfied that Mr. Exley's had the best title to the prize. At the same time, we wish to show our appreciation of those efforts which ran his close, and propose to do so in practical fashion by publishing one or two in this journal. Other competitors will please accept our best thanks for the opportunity of seeing their work. Not a little of it, though quite unsuited to this class of periodical, possessed considerable artistic merit. Other drawings were wrought with the conscientiousness that compels respect, even if it does not extort admiration. Others, again, had the qualities of humour and inventiveness in conception, without, however, showing the technical skill that would have enabled us to publish them. There were, in fact, all sorts, including even one that portrayed a painful domestic episode in fowl life so realistically that it made us blush. We must warn its author not to do it again.

Our Young Essayists.

Our other competition, namely that for the best essay on any subject connected with poultry-keeping, was open only to boys and girls under fifteen years of age, yet the number and quality of the entries fully justified our conviction that the interest in the industry and the possession of "views" on how to conduct it successfully are by no means confined to adults. The fanciers and authorities of the future, who favoured us with their contributions, were drawn from England, Scotland, and Ireland, Wales alone in the United Kingdom failing to furnish

a candidate; this representativeness was extremely gratifying. We shall print the winning essay in the March issue, and we think our readers will be satisfied that it is really the handiwork of its fourteen-year-old author. We mention this matter of genuineness because it was one that largely affected our decision. There were some essays which, though written in a childish hand, showed such a precocious felicity of expression that we should have been proud to have done them ourselves; but we were looking for something that had been composed as well as written by somebody under fifteen years of age, and that is why none of these superlatively accomplished efforts gained the prize.

Our £50 Competition.

A number of readers have written to us asking whether we could see our way to extend the date of closing of this competition from March 31, 1909, to September 30, 1909. They point out that six months is much too short a period in which to secure many subscribers, particularly so far as those living abroad are concerned; besides which a goodly number state that they did not hear about the competition for at least a couple of months after it had commenced. With a view to meet the wishes of our readers in the matter, we have decided to extend the date of closing to September 30, and we have communicated with those who are already competing and have obtained their consent to this extension. Full particulars of the competition appear in our advertising columns.



REARING UNDER DIFFICULTIES.

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FOX-HUNTING AND POULTRY-KEEPING.

An Inquiry into the Facts.—Summing Up.

By "HOME COUNTIES."

Author of "The Townsman's Farm," "Poultry-Farming: Some Facts and Some Conclusions," "Country Cottages," "The Case for the Goat," &c.

MY two previous articles have been devoted to setting out certain facts bearing on the relations of Fox-Hunting and Poultry-Keeping, and to reproducing the replies of a number of Masters of Hunts to the questions in a circular which I ventured to address to them on behalf of THE ILLUSTRATED POULTRY RECORD with the object of ascertaining as fully and accurately as possible the point of view of instructed and experienced hunting men.

I.—The Case for the Hunts.

It will be convenient, I think, that I should now try to summarise the evidence which the Masters of the Hunts have so courteously given. Their testimony seems to come to this :

1. That poultry-keeping is increasing "to some extent."

2. That sums ranging upwards from 1s. 6d. or 2s. are paid to all who claim compensation for poultry destroyed by foxes—many hunting farmers do not claim—but it is doubtful whether the sums awarded reach market price in the cases of pure-bred birds or of birds about to lay or in the middle of winter laying.

3. That the total amount of the Poultry Funds is in many cases considerable, averaging in the case of the ten Hunts, the figures of which are available, about £370 per annum.

4. That the Hunts are victimised, to a limited extent, by exaggerated claims, or claims in respect of poultry lost through other causes than foxes.

5. That the Hunts have no shortage of foxes, and the fox population is therefore admitted to be considerable.

6. That poultry would hardly ever be lost if they were shut up before dusk and not let out early in the morning.

7. That many fowls said to be lost are stolen or are destroyed by other creatures than foxes.

8. That hunting men are large customers of poultry keepers, and as buyers of straw, hay, corn, &c., also put large sums of money the farmers' way. It is also claimed that the financial value of hunting men to the countryside as employers of labour

directly and indirectly ought to be taken into account. Generally, it is urged that the sums lost through foxes preying on poultry are small compared with the benefits which accrue to rural districts from hunting as an institution, and that, with motor-cars and the facilities for getting sport abroad increasing, it is inexpedient to put too heavy a tax on Hunts in respect of the occasional depredations of foxes.

9. That, with tact and fair dealing, hunting and poultry-keeping ought to be able to get along together, though it would seem that, with an increase in the number of poultry, the expense for claims and damage must rise, and the value of shooting land—partridges and pheasants not doing as well in districts where a great deal of poultry is kept—must fall. (Hunting men usually shoot.)

10. That there are large tracts of unhunted country suitable for poultry.

II.—The Case for the Pro-Hunting Poultry Keeper.

It is not in the least necessary in a poultry magazine to print at great length the case of the poultry keepers against foxes. It is all quite well known already. One thing, however, it seems to me, has to be said to poultry keepers, and that is that they must decide on the side on which they prefer to stand, and stick to it.

If they are farmers, and if they hunt, they have plainly no grievance against foxes whatever—that is, if the foxes are fairly distributed about the country traversed by the Hunt, and are not lodged in one corner only.

Again, if they do not hunt but approve of hunting, they must be consistent and act up to their convictions. It is impossible to make omelettes without breaking eggs. If foxes are to be kept they must eat, and, if they are to be kept in sufficient numbers to make the finding of at least one good fox a certainty every hunting day, the provision of food must be ample, and a change of diet from rat and rabbit to hen is not a thing to be grudged. If hunting be defensible because it keeps men fit, because it provides an invigorating day, not only for country gentlemen but

for men who have to slog in the City, and because it maintains the reputation and skill of Englishmen as bold riders, and if poultry keepers approve of hunting as such an agency for good, then, as good citizens, they should honestly acknowledge that some little sacrifice of convenience and profit may be not unreasonably expected from them.

If, again, whether as farmers, with horses, oats, straw, and hay to sell, as agriculturists interested in the maintenance of a supply of labour in the country districts, or as poultry keepers, some of whose produce is readily marketed at country houses, the owners of poultry acknowledge that they have a commercial interest in the continuance of hunting, they ought surely to put one thing against the other—in other words, ask themselves whether their losses amount to an undue discount on their gains, and, if they do not, allow the discount gracefully.

Briefly, the poultry keeper who, for sentimental, patriotic, social, or commercial reasons, believes in hunting, cannot be too exacting in the matter of claims for lost fowls. The Hunts have increasingly large demands made upon them for losses of poultry, for damage to fences, and for other things. There is direct payment of claims, and there are subscriptions to local institutions—sometimes it is the cost of making a new road. And the Hunt Committees cannot do impossibilities. However willing they may be to pay liberally, they have to make the money at their command go round.

If poultry-keeping should go on increasing—as there is every sign that it will do—the estimates of some Masters seem to be on a conservative basis—then the only thing that can be done is by tact and fair dealing on the part of the Hunts, and by reasonable claims on the part of pro-hunting poultry keepers, to unite to make things go as smoothly as possible. As the years pass the situation will no doubt call for more effort and more money, but that is the affair of hunting people and pro-hunting keepers of poultry. They both believe in hunting, and they have to back up their principles.

III.—The Case for the Anti-Hunting Poultry Keeper. (a)—Where the Shoe Pinches,

When, however, we turn to farmers and poultry keepers who do not hunt and do not believe in hunting, the position is very different.

"Fox-hunting" (writes to me a man in a great poultry-fattening district, who has farmed his own freehold for many years) "is a curse to the country, at least around here, where we are overrun by two or three different Hunts. That is not the worst of it. They turn down young foxes (cubs) in the centre of the district and chickens are not safe even in the daytime, and where a tenant is under a hunting landlord you know what happens if he treads on a fox.

The industry is declining because of the foxes and the scandalous treatment losers receive at the hands of the Hunt—about 1s. per head for 3s. birds.

The question of shutting up at night that hunting men make so much of is all bunkum. No practical poultry keeper would neglect to shut his birds up at night, foxes or no foxes.

For several years I have been unable to use for fowls a large part of my land adjoining a wood because the birds were picked up in broad daylight by foxes. Apart from the expense, netting is no use where you turn out cattle, for they break it down.

I occasionally have the satisfaction of turning these hunting men and hunting ladies back the way they came in full cry, much to their annoyance."

Again, what is the impression made on an impartial mind by the following letter?—

I have resided here over fourteen years. My family has owned the farm for generations. It is now 250 acres in extent, long in proportion to its size, situated between two large coverts on the borders of the Hampshire Hunt. In both these coverts foxes breed very freely. The Hunt is worked or managed by two Masters and a Committee, all of whom are ready to share the glories but none to be responsible for the reverse. Hence all the trouble.

Until about eight years ago, that is, until I kept poultry on a large scale, we were on friendly terms, but as my poultry increased so did my losses, till in one year alone I lost close on £100 worth of birds by foxes. It did not matter whether the birds were in wire runs or in coops, the foxes killed them.

After considerable trouble and bad feeling I received £10 worth of netting and was told that I had no business to keep poultry! I very soon told them what I thought and what I should do.

Unfortunately I poisoned a fox. The Hunt got the police to summon me for laying poison. This cost me £20.

However, that winter I had *fifty-four* foxes killed.

Now we are on more friendly terms, but of course I am a thorn in their side, and of course had I been a tenant farmer I should have been moved long ago.

I have no doubt that had I lived in a country where there was a responsible person to look into poultry claims things would have been different; but here the great idea is to cut down expenses. So they do. They have just reduced earth stoppers' money to 1s. and don't pay for finds if they can help it. All poultry claims are entirely ignored if made by small farmers and cottagers, although I believe they profess to pay 1s. 3d. (fifteen pence) a head for poultry, old or young, large or small.

I know many cottagers and small farmers who have given up poultry rather than make a bother. But things cannot keep on like this much longer. Why should a profitable industry suffer for the sake of the rich man's pleasures?

It would be an easy matter to reproduce other letters on the same lines, and clearly the only conclusion that can be come to is this: that, in a free country, owners of poultry who do not believe in hunting are fully entitled to be remunerated, not at a nominal price, but at the market price for every bird of theirs eaten by foxes.

It is certainly not the business of hunting men to suggest at what hour poultry shall be released from their houses. It argues a preposterous state of things that one Master should be advising poultry

keepers to keep their birds locked up till eight o'clock. Fancy hens stewing in a field house till that time on a summer morning!

Nor is the pressure which has been undoubtedly brought to bear by some landowners and rural dignitaries on poultry keepers, who are not independent of them because they do not occupy freehold land, a matter which can be overlooked. It is probably the case that my second correspondent, had he been only a tenant farmer instead of a freeholder, would have had to move from his holding, albeit his people have been connected with it for generations and nothing is to be alleged against his ability as a farmer. Such a state of things there can be no hesitation in judging to be preposterous and wrong.

I hope there will be no suggestion on the part of any hunting reader that there may be another side to this correspondent's story. I have not reproduced his name and address, but I have not given the name and address of any fox-hunting witness either. If it has been fair to accept the statements which the fox-hunters have made to THE ILLUSTRATED POULTRY RECORD as given in good faith, we may reasonably accept the accuracy of the testimony of the only two poultry keepers I have troubled to put in the box. The two representatives of the poultry keepers have certainly given their evidence with a directness and precision which would have caused them to be regarded by a judge and jury as good witnesses.

Had we need of further witness as to the losses caused by foxes, here it is in the morning paper as I write :

FOXES' RAID.—At Kearsney Court, near Dover, where Mr. E. P. Barlow had in his pheasantry 151 birds, foxes broke in during the night and killed 138. —*Daily Chronicle*, Jan. 16.

(b)—The Turning of the Worm.

One of the Masters who has been kind enough to explain his views calls my attention to the fact that no poultry keeper is legally entitled to compensation for birds destroyed by foxes. Neither is he. But if he insists on compensation the Hunt must compensate him fully, because every poultry keeper is within his legal rights in killing foxes which prey upon his stock if he uses for their extermination other means than poison. No doubt, singly and on his own land he cannot do very much harm to the interests of the Hunt, but if many poultry keepers are unfairly treated they can combine in their campaign against foxes, and in due course hunting would be as vain in their part of the countryside as it would now be in many parts of Scotland. In the last resort, therefore, the poultry keeper seems to have the whip hand. The following paragraphs, published within a single

week in the London newspaper just quoted, speak for themselves :

FOXES EXTERMINATED.—Surprise was caused yesterday in East Essex by the dramatic action of Major Edmund Deacon, who resigned the Mastership of the East Essex Hounds—a post he has held for ten years—as a protest against the absence of foxes in the district. A succession of blank days, when the hounds and field have searched in vain through various coverts to find a fox, has led the Master to take this course. Hunting people are very sore over the scarcity of foxes in that part of Essex, and complaints have been raised that the sport has been rendered impossible by the destruction of the animals. On the other hand, farmers who have to make a living by their holdings have resented efforts that were made to introduce half-tame foxes to East Essex, in order properly to “stock the county” according to the idea of hunting men. The farmers, it is asserted, have simply treated such foxes as vermin, and shot them to protect their poultry yards. An incident which occurred at Braintree railway station, when eight half-tame foxes arrived in a crate, illustrates the methods that have been adopted to provide the means of “sport” in the county. Farmers hate imported foxes, which live solely by robbing hen-roosts. The result is seen in the total extermination of Reynard in some districts of Essex. The protection of Christmas poultry has proved a more important matter for the farmers than the preservation of foreign foxes. As to Major Deacon, he was personally very popular with the farmers, who regret his resignation.—December 25.

SCARCITY OF FOXES.—A meeting of the subscribers of the Blankney Hunt was held at Lincoln yesterday, Lord Londesborough presiding, when a letter was read from Lord Charles Bentinck resigning the Mastership on account of the scarcity of foxes.—January 2.

(c)—Plain Speaking to Hunting Men.

As to the statement of the case for the Hunt, as I have been enabled to set it out, poultry keepers who do not approve of hunting are entitled to scrutinise it very closely.

1. They will say that poultry-keeping is not increasing “to some extent” only, as stated, but considerably, especially in some districts, and that its profits are diminished by hunting.

2. They will say that, even if Hunts do pay an average of £370 a year in compensation for killed poultry, it is not enough if it is a ha'penny short of the real value of the birds.

3. They will add that the Hunt Committees may be victimised by rogues, or they may not, but in any case it is a matter between the committees and the rogues, and does not affect the justice of the claims for compensation made by honest poultry keepers.

4. They will go on to say that not only the admission of the Masters that they are not short of foxes, but the statement of the *Field*, shows that the danger to which poultry keepers' stock is exposed towards dusk or on a foggy morning is a real one, and that this danger ought not to exist.

5. With regard to the fodder and litter bought by hunting people, the answer will be that these things are in many cases purchased not from farmers but from middlemen, and that if the hunting people did give up hunting or did take their custom out of the district, and the marketable value of the goods farmers had been in the habit of buying was thereby affected, the farmers could, no doubt, turn their attention to producing something else.

6. As to the hunting men keeping labour in the countryside, the reply will be that, from the farmers' point of view, the country houses spoil labour by raising wages to an artificial scale and by turning the attention of young men away from the legitimate work of the land towards the doubtful dignity of game-preserving and the idle joys of "beating."

7. As to the hunting men necessarily doing good by causing money to circulate, their critics will suggest that the notion that spending lavishly is a virtue betrays an unacquaintance with the very elements of political economy.

8. With regard to the threat of hunting men to flee a poultry-infested and a poultry-keeper-ridden England and seek sport abroad, the argument will be that such threats have been made before by many classes threatened with the loss of privileges, and are not likely to come to much; and that in any case in highly developed and closely populated districts hunting is a good deal of an anachronism, and, in time, in areas where poultry-keeping is anything of an industry, is likely to become so much of a nuisance, and, for physical as well as financial reasons, must grow to be so difficult, that it will eventually become a question whether it is worth promoting there at all.

9. In conclusion the poultry keeper will probably lay stress on the fact that the struggle is between an industry and a recreation, between those who are getting their living and those who are getting their play. They will add that the pretensions of some exponents of the relations of fox-hunting and poultry-keeping—from which, whatever other fox-hunters may think of these views, some poultry keepers undoubtedly suffer—are inconsistent with the principles of civil freedom in a modern State.

IV.—What can be done? (a) By the Poultry Keeper.

So far I have not expressed my own opinion or my own finding on the evidence tendered on the one side by hunting people and on the other by poultry keepers. I do not see much use in expressing my own opinion. It is very much more to the purpose to try to set out each party's opinion and, if it be possible, to do something towards enabling the two sides to see each other's point of view.

As I have suggested, a great many critics of the compensation tariffs of the Hunts occupy an illogical position. That is one to the Hunts.

On the other hand, the Hunts are in the illogical position of claiming, as by right, not only to take their pleasure but to keep the *materiel* of their pleasure on other people's property to the loss of those people. That is one to the poultry keepers.

Again, the subscription lists of the National Poultry Organisation Society and local poultry exhibitions would have gaps if no fox hunter were asked to appear in them, which shows, as do indeed many of the Masters' letters, that most hunting men do not wish ill to poultry-keeping, but are in many cases its supporters. This is surely one to hunting people.

But it is undoubtedly one to the poultry keepers that the Hunts, by paying, as they have done hitherto, part of the value of poultry killed by foxes, have acknowledged their financial indebtedness to poultry keepers.

I cannot see that there is anything in the situation between poultry keepers and hunting men to get abusive about. It is the lawyer who has no case who abuses the opposing party's attorney; and the poultry keeper has both law and custom on his side. By custom he has been supposed to be paid for his losses. If he is not now properly paid, Hunts can be brought to reason sooner or later, for the fox is a wild animal, the stealing of which—conveyance, the wise it call—is no larceny (I. Hale, 512; R. v. Spearing, R. and R., 250) and the killing no murder. If the Hunt comes on poultry keeper's land it is, of course, trespass (Paul v. Summerhayes, 48 L.J.M.C., 33).

(b) By the Hunts.

One is the more reluctant to write excitedly on one side or the other because a great many poultry-keepers seem to be in both camps at once, being hunting men as well as owners of poultry! This is of good augury for a satisfactory settlement of the grievances which admittedly exist.

Happily no situation is ever quite so bad in practice as it seems to be in theory. In theory modern hunting looks like a thing that could never work. In practice it does work, and it has many friends. The British race has a wonderful talent for compromise and friendly accommodation, and country people are particularly good at these things. Poultry keepers will, no doubt, secure in due course, like most people in the long run, very much the conditions for their industry which they deserve. If it were not enough to have law and custom at their back, they are in the position of being able to command public sympathy.

But let that section of poultry keepers which believes in hunting be warned once more that it cannot have things both ways. Is it impressed by the fact that the maintenance of fox-hunting involves the spending of not far short of three millions sterling in the country yearly, independent of country-house expenditure in the winter months, and is the means of drawing different classes together and of promoting not only good feeling but health? If so, it is its duty not to make the conditions too hard for hunting.

It is the poultry keepers who are against hunting who are entitled to use strong language about the turning down of foreign foxes and about land being no longer safe for chickens. It is they who may properly stand out for the uttermost farthing of their accounts against the committees and, if needs must, go forward to the harrying of foxes and the formation of a trade union.

As for the Hunts, they will be well advised perhaps to agree with their adversary quickly while they are in the way with him—in other words, do their best to meet claims in full. Their sport will cost them more—but everything does that nowadays. They will say

and think that higher prices are simply an impossibility. But there again everyone is saying the same thing every day of his life and paying higher prices.

It was one of the extraordinary theories of Mr. Rhodes, which he was always trusting to, that no man whom you had treated on a generous basis in money matters could ever do you much harm. The Hunts would no doubt find it work out all right, as the Colossus did.

A Suggestion.

As I close I remember the postscript of an ill-used poultry keeper's letter to me. "Every other sport," he wrote, "should be paid for, and so should fox-hunting. It is time that the whole question was thoroughly gone into. So long as it is possible the members of Hunts will let the matter slide. They know that a public inquiry would not be beneficial to their sport."

Why should there not be a public inquiry or at least a Conference between hunting men and representative poultry keepers?

THE CONSUMPTION OF EGGS AND POULTRY.

By "STATISTICIAN."

TAKING the figures obtained from the Trade and Navigation Returns as to foreign and colonial egg and poultry imports, those of the Irish Department of Agriculture as to supplies from the Green Isle, and Mr. Edward Brown's estimate as to British production and consumption, we arrive at the following totals:

NUMBER OF EGGS CONSUMED IN BRITAIN, 1908.

Foreign supplies	2,185,208,400
British do.	1,320,000,000
Irish do.	770,092,200
			4,275,300,600

On this basis it will be seen that last year the people of England, Scotland, Wales, and the town of Berwick-upon-Tweed consumed an average of 114 eggs for every man, woman and child of the population, of which 58 were foreign, 35 British and 21 Irish. This average means less than one egg each in three days. Thus the figures are not so wonderful. If ever the time arrives when one egg per diem is consumed, then the annual value of this product

will be upwards of £47,000,000. Great are the opportunities of the poultry industry! These averages tell us that, calculating each egg as weighing 2 oz., 14½ lb. of one of the most concentrated and best natural foods is annually consumed by each Briton. Or, to take a household of five members, each of these could claim as its share last year 71½ lb. of eggs, of which 36 lb. would be foreign, 21½ lb. native, and 13¾ lb. Irish. If each egg cost a penny, the individual expense would be 9s. 6d., and the family bills would be debited for this article of food to the extent of £2 7s. 6d. As we are told that an egg weighing 2 oz. contains as much nutriment as half a pound of beefsteak, the individual results obtained would be equal to 57 lb. of that class of flesh, costing at a reasonable computation 47s. 6d., and thus economising to the extent of 38s. The people of London consume every year 700,000,000 eggs, of the value of nearly three million pounds sterling.

The figures are startling in the aggregate volume of eggs consumed. Taking the 2 oz. basis, the total

weight consumed in 1908, without packages, was 238,578 tons, of which 121,942 tons were foreign, 73,661 tons were British, and 42,975 tons Irish. The Eiffel Tower at Paris weighs 7,000 tons, and thus the eggs consumed, if transformed into metal, would build thirty-four such towers, each rising a thousand feet into the heavens. But, since eggs bulk many times larger than metal, British consumption would be enough for more than two hundred Eiffel Towers.

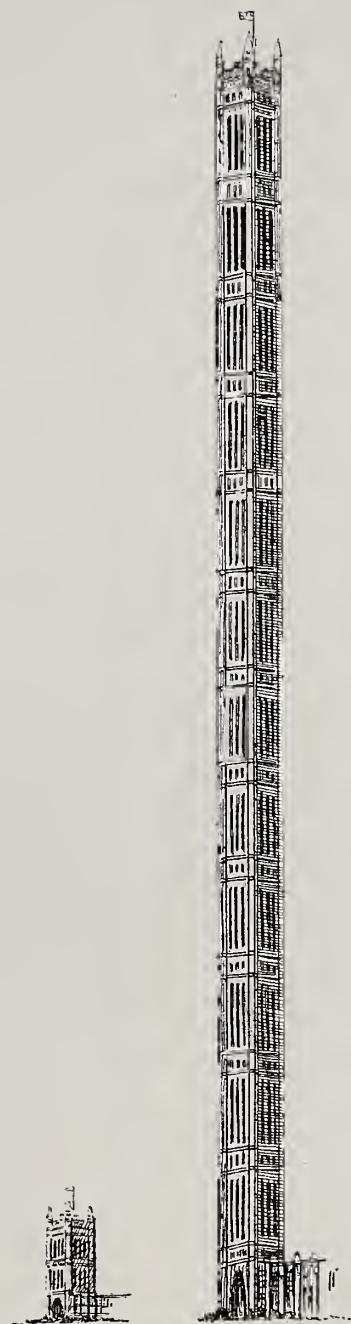
In calculating the transport of eggs we have to take into account packages, and the larger foreign cases average about ten to the ton, whilst the 360 English cases would average about forty to the ton. Thus we arrive at the following results :

NUMBER AND WEIGHTS OF PACKAGES OF EGGS.				
	No. of Eggs in case.	No. of cases.	Total weight. Tons.	
British	360 ...	3,666,666 ...	91,666	
Irish	1,440 ...	534,786 ...	53,478	
Foreign	1,440 ...	1,517,506 ...	151,750	
Total ...		5,718,958 ...	296,894	

Now can be seen what traffic is involved. Taking the railway journey first, if we allow $8\frac{1}{2}$ tons as an average load per truck, that would mean eighty-four foreign and Irish cases or 336 English cases respectively for every truck. Thus there would be required 35,345 wagons, with fractions over, to convey a year's supply of eggs. Allowing thirty trucks to each engine, 1,112 powerful locomotives would be needed to draw these trains. Of these 35,345 wagons, 18,065 would be filled with foreign eggs, 6,367 with Irish, and 10,913 with British eggs. If these wagons, each with the buffers occupying 20 ft. in length, were formed into a continuous row standing at rest without any locomotives, we should have a train extending over 134 miles, say, from Liverpool Street to Reedham, Norfolk, of which from London to Ely (68 miles) would be foreign, from Ely to Thetford (24 miles) Irish, and from Thetford to Reedham (42 miles) British.

The ordinary lorry or van by which eggs are delivered in London may be said to carry two tons, say twenty foreign or Irish cases, or eighty English, each drawn by two horses. If delivery were to be made at one time, 148,447 such vans would be required, and double that number of horses, of which vans 75,875 would contain foreign supplies, 26,739 Irish, and 45,833 British.

Presuming that all the year's supply of eggs could be delivered in cases at one time, say, at Hanover Square for the convenience of the National Poultry Organisation Society, let us see what the result would be. The square mentioned embraces about two acres. Foreign and Irish cases vary somewhat in size, but the cubic capacity is about the same. It



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The Victoria Tower, Westminster, is 75 ft. square and 336 ft. high.

If the eggs consumed in 1908 were built into a solid block, they would form eleven towers as high and square as the Victoria Tower.

will be enough for our purpose if we adopt the French size, namely, 6 ft. $6\frac{1}{2}$ in. long, 1 ft. $8\frac{1}{2}$ in. wide, and $9\frac{1}{4}$ in. deep. On that basis 7,800 foreign or Irish cases would be required, if packed tightly together, for covering the entire two acres. The foreign eggs would form about 194 rows, rising to the height of $149\frac{1}{2}$ ft.; above might be placed the Irish eggs, adding about $68\frac{1}{2}$ rows, or 53 ft.; then would come the British eggs in 30 dozen cases, which are usually $31\frac{1}{2}$ in. long, $12\frac{1}{2}$ in. wide, and $11\frac{3}{4}$ in. deep. Of these 31,350 would make a complete row, and, therefore, 117 rows would be formed, $114\frac{1}{2}$ ft. in height. Thus the entire column would be egg-staled to a total elevation of 317 ft., nearly as high as the dome of St. Paul's Cathedral.

Supposing that all the eggs consumed during 1908 had been made into a chain, each link consisting of one egg, which may be taken as $2\frac{3}{4}$ in. in length, it would have extended 204,528 miles 5 furlongs and 100 yards, of which 57,291 miles 5 furlongs and 73 yards would have been British, 33,424 miles 1 furlong and 27 yards Irish, and 113,812 miles 7 furlongs foreign. Such a chain would encircle the earth at the equator eight times and leave two ends of 2,264 miles each to tie a bow. Truly that would be "girdling the earth."

If the eggs consumed last year were used for paving a roadway 36 ft. wide, it would stretch from one end of Britain to the other. The average diameters of an egg are $2\frac{3}{4}$ in. in length and $1\frac{3}{4}$ in. in width. Thus, laid closely together, a yard of road of the breadth named would require 3,198 eggs. A road could thus be formed of the total length of 765 miles 4 furlongs and 129 yards, which would be sufficient to stretch from London to John o' Groat's and leave enough to continue south to Eastbourne, thus linking the English Channel with the North Atlantic. Of the roadway 394 miles 2 furlongs 17 yards would be paved with foreign eggs, 234 miles 3 furlongs 208 yards with British, and 126 miles 6 furlongs 124 yards with Irish. Or if three roads were formed of 36 ft. width, each starting in London, the foreign egg road would stretch from London to Edinburgh, the British from London to Plymouth, and the Irish from London to Cromer.

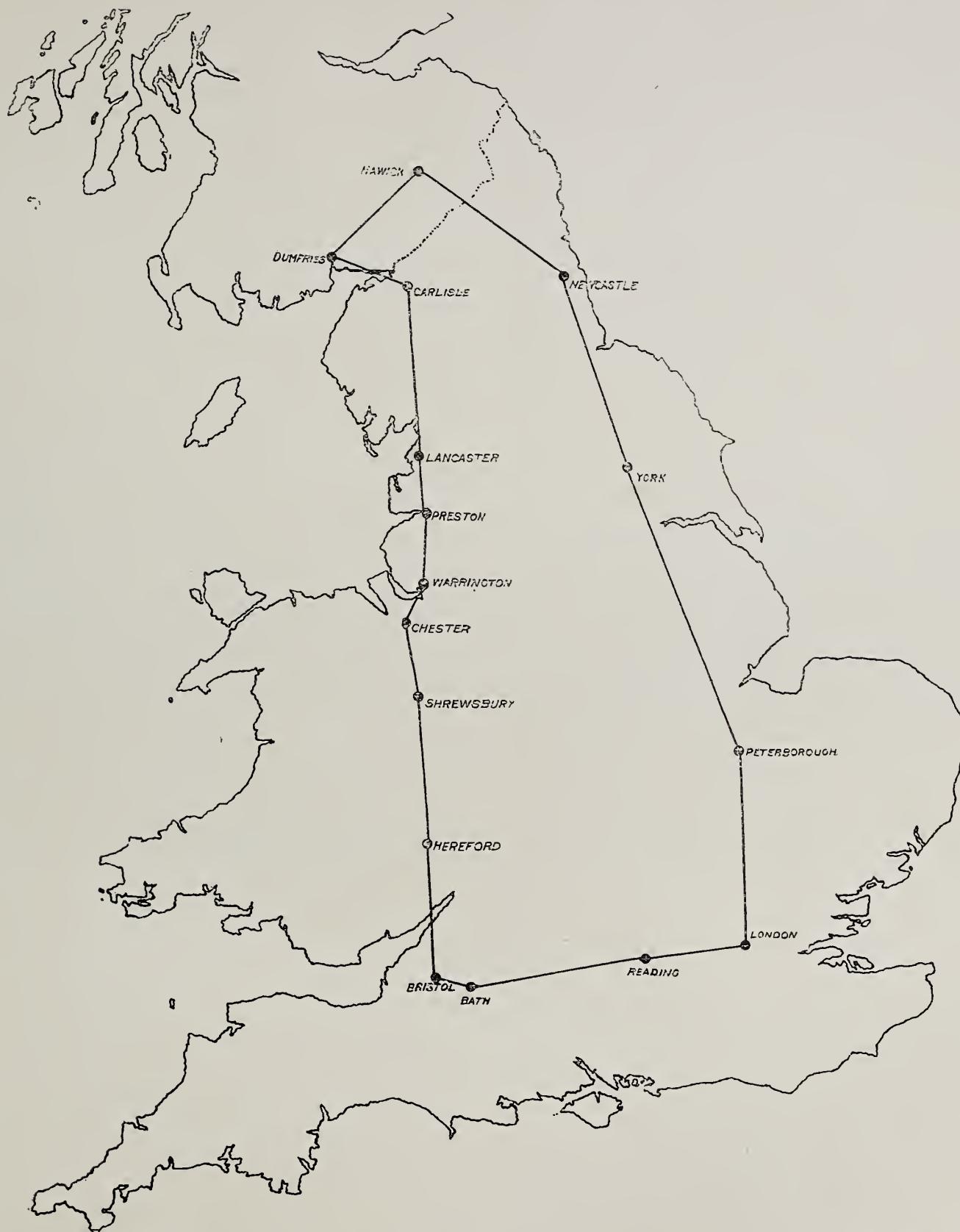
Everyone who has seen the Victoria Tower, at the Houses of Parliament, Westminster, is impressed with its massive proportions. This splendid piece of masonry is 75 ft. square and 336 ft. high, covering the greatest area of any tower in the world. If the eggs consumed in 1908 were built into a solid block 75 ft. square, without cases, there would be required 1,168,000 for each foot in height, and the total height would be 3,660 ft., or 400 ft. above the summit of Scawfell Pike, the highest mountain in England, of which 1,871 ft. would be foreign, 659 ft. Irish, and 1,130 ft. British. The total eggs consumed would build

eleven solid towers as high and square as the Victoria, of which the foreign would make $5\frac{1}{2}$, the British $3\frac{1}{2}$, and the Irish 2.

Testing and grading eggs is a necessity, in order to determine their quality and condition. By hand and eye an expert operator can handle 8,000 eggs in a working day of eight hours, using lamp or electric light for the purpose. At that rate the eggs consumed last year would have employed 1,781 earnest and skilful workers for 300 days in the year, of whom 910 operators would be employed for foreign eggs, 550 for British, and 321 for Irish, and they would not have much idle time. If tested in batches of 120, which is not so certain, though largely used for cheaper qualities, 20,000 can be handled in a working day of eight hours by each operator, and he can grade also. This would give employment for the whole year to $712\frac{1}{2}$ men, of whom 364 would be entirely engaged on foreign eggs, 220 on British, and $128\frac{1}{2}$ on Irish.

For the production of so vast a quantity of eggs, if each hen laid 100 eggs per annum, which is a high average for farm stock, especially abroad, 42,753,000 hens would be required, and they would ask for four million males to keep them company. On grass land wholly given up to poultry it is usually thought that forty birds per acre is the utmost limit for this class of stock, and hence for their accommodation we should require 1,168,825 acres. The cultivated land in the West Riding of Yorkshire comprises 1,186,328 acres, and if that section of the premier county were turned into a huge poultry farm nearly every foot of ground would be required. Supposing that the portable houses now so general were employed for their protection, 1,890,000 of such houses must be provided. The cost of feeding at the proverbial 1d. per week would be £194,804 3s. 4d. weekly. Allowing each bird $1\frac{1}{2}$ lb. of wheat or its equivalent per week, there would be needed every seven days 31,307 tons 16 cwt. 1 qr., or annually 1,628,906 tons 5 cwt., which at £7 10s. per ton would mean a yearly food bill of £12,210,046 17s. 6d.

These 46,753,000 fowls would form an army before which European regulars and reserves would appear very small indeed. If placed in a line twenty-four abreast and allowing 2 ft. for each bird, they would extend 737 miles 7 furlongs 152 yards, and marching at the rate of four miles per hour would take $184\frac{1}{4}$ hours to pass any given point on the road. Or, if marshalled in Hyde Park and Kensington Gardens, which, however, would not be large enough to assemble the army at one time, and dispatched via Reading to Bath and Bristol, then turned northward by Hereford and Shrewsbury to Chester, and on to Warrington, Preston, Lancaster, and over Shapfell to Carlisle; and if, crossing the border there, the advance



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If 46,753,000 fowls, marshalled in a line 24 abreast, and allowing 2 feet for each bird, were despatched from London to Bristol, via Reading and Bath, thence to Hawick, and back again to London by the route indicated above, the first column would be coming down Edgware-road as the last contingent was leaving the Marble Arch.

guard proceeded via Dumfries to Hawick, where a turn would be made, striking through Northumberland to Newcastle, and back to London via York and Peterborough; in this case the first columns would be coming down Edgware-road as the last contingent was leaving the Marble Arch.

Unfortunately, it is impossible to deal with poultry on the same lines as eggs, as import values alone are given in the returns. In the Irish tables the poultry exports and imports are stated as amounting to 264,851 cwt., to which we may add about $12\frac{1}{2}$ per cent. for home consumption, thus bringing the total to 300,000 cwt. of poultry production in Ireland! At twenty-five birds to the cwt., which is fair as fowls, ducks, geese, and turkeys are included, we find that there would be 7,500,000 birds of all grades. Foreign and colonial supplies are only a few thousand pounds in declared values over the Irish, which may be put down to carriage; we may, therefore, accord the same number, 7,500,000, to them. The British are more difficult to estimate, but from their greater size, we suggest 17,000,000 as a fair number, making 32,000,000 in all. These would merely provide six-sevenths of a fowl per head of the population per annum, which is very modest indeed, and offers abundant scope for increase. Poultry keepers need not fear overstocking the market. These would represent 67,500 tons of poultry meat, of which 37,500 tons would be British, 15,000 tons Irish, and 15,000 tons foreign. If all these were packed in Sussex peds, with 12 birds in each, each ped measuring 18 in. by 15 in. by 15 in.,

23,230 would cover an acre. Building a stack in Cavendish-square to match that of eggs across Oxford-street, there would be $114\frac{1}{2}$ rows, and the cases would rise nearly 150 ft. high. Or if loaded upon railway wagons, 9,375 would be required, extending for a distance of 35 miles 4 furlongs 20 yards, say from London to Hayward's Heath, of which 19 miles 6 furlongs would be British, 7 miles 7 furlongs Irish, and 7 miles 7 furlongs foreign. Great though the volume of trade may be, yet relatively to the country the production is very small. In England there are 371,475 holdings, the average acreage of which is 60.2. Hence if 86 head of poultry of all kinds were marketed annually from each holding, which means less than $1\frac{1}{2}$ bird per acre, the whole of the sale as at present would be provided for.

Many other calculations could be made, but these will suffice to show the importance of the poultry industry as it is and the enormous opportunities for development. We may, however, close by summarising the present trade in eggs and poultry:

	Total Weights (including packages). Tons.		Values. £
Eggs	296,894	...	15,735,530
Poultry	67,500	...	4,553,847
	364,394	...	£20,289,377

If the total of eggs and poultry were to be transported by sea in vessels carrying 2,000 tons, a fleet of 182 steamers would be required, or practically one every second day.

POULTRY-BREEDING: PROBLEMATICAL AND POSSIBLE.

By EDWARD BROWN, F.L.S.

WERE we to accept all that has been stated and written of late years with respect to selection by trap-nesting, we might anticipate that ere long poultry-farming would be the most lucrative of pursuits. Diamond-digging would not be in it. A few years of work would enable poultrymen to build or buy mansions in Park Lane and aspire to seats in the House of Lords, as members of what might be termed, not the Peerage, but the Henage. Imagination has run riot in this direction. The performances of a few individual birds, abnormal in fecundity or table properties, have been regarded as a standard for the species and heralded forth as the advance guard of what are yet to be. On the other hand, there are still existent representatives of that peculiar

genus, the lugubrious man, who seems to have no ambitions, no aspirations, no faith, and who believes in nothing or nobody. If you tell him that a hen has laid 200 eggs in twelve months, or that a chicken can be reared in twelve weeks and leave a profit of 1s. 6d. or 2s. over its food cost, he does not believe the statement. He lives in the shadows. To him all, "all is vanity." A man of the former type, if he has grit and determination, will learn by experience, and will arrive at a better realisation of things as they are, possibly may accomplish much; but the latter, poor fellow, can never do anything worth a record.

Progression Continuous.

In the light of what has already been done by the breeder through past ages—nay, in the lifetime of

many of us—we may anticipate that more is within the possible range of our operations. The chapter of improvement is certainly not closed. In fact, some of us believe that there are many pages yet to be turned. Progression is continuous. Every step taken, every success achieved, reveals greater opportunities. That is true in breeding operations as in every other department of life. Pitfalls there are, many and wide. Difficulties unseen from below present themselves as we reach the greater altitudes. But with these is the widened experience by which we are often enabled to overcome the newer problems presenting themselves. One thing cannot be gainsaid—namely, that the progress already made since poultry were first domesticated is greater than anything we are attempting in the immediate future. That should be an incentive to further effort.

What Has Been Accomplished.

Brief must be the enumeration of what has already been done, but some reference to the wonderful changes which have taken place will be an encouragement. Here are a few of the results:

BREEDS.—From the four original types of the different species of poultry—Fowl, Duck, Goose, and Turkey—we have hundreds of breeds and varieties, varying in type, colour of plumage, secondary characters, and qualities.

SIZE.—Many of these have greatly increased in size of body, the chief exception being that of the Turkey, which has been reduced, probably by definite selection. Save the diminutive races, such as Bantams and fancy Ducks, development of size has been from one to four hundred per cent. And with that has come considerable changes in flesh coloration, &c.

EGG PRODUCTION.—Instead of the 22 to 26 eggs laid within the yearly cycle by the Jungle hen, we have breeds normally producing from 80 to 150 eggs per annum, largely the result of natural, not artificial, influences.

FLESH QUALITIES.—The same effect is found in this direction, though to a lesser degree. If we compare the quantity and quality of the flesh upon the Jungle fowl or the Grey-lag goose with that on the Dorking or Game fowl, or the Toulouse goose, what a vast progression is evident! Moreover, by definite selection breeding has counteracted the reduction of size of wings and therefore of breast muscle, which would have resulted had Nature taken the usual course, due to disuse of the wings under domestication. Early maturity has been attained to a degree which at one time must have seemed impossible of accomplishment.

MATERNAL INSTINCT.—And the sitting quality has been modified, in some cases practically suspended,

without curtailment of the laying quality, with which it is associated.

How Achieved.

The list is by no means complete, but will suffice for our present purpose. The accomplishment is vast, a revolution indeed, one which is an encouragement to further effort, to a greater realisation of the power given to us. How achieved is a study of the deepest interest. Many factors we know little about, but some are understood. Natural selection there has been to a marked degree. Changed environment, due to man's action, accounts for much, with new conditions of soil, of climate, and of food. Or, as Darwin puts it: "Man has no power of altering the absolute conditions of life; he cannot change the climate of any country; he adds no new element to the soil; but he can remove an animal or plant from one climate to another and give it food on which it did not exist in its natural state." So much may be regarded as natural selection, though not wholly so. It, however, has formed the basis upon which artificial selection has been erected. The use for breeding of selected birds, chosen sometimes arbitrarily, as in the case of purely ornamental or fancy stock, but generally by reason of special suitability to local conditions, or of qualities which the owners desired to perpetuate and increase, has been the means of adding to the value of our poultry as contributory to the food supply, which, with an enormously advancing population and intensification of methods of life, becomes more important than was the case formerly. It is not too much to say that the present inhabitants of the globe could not exist for a week if they depended entirely upon natural products, *i.e.*, obtained in the way general under primitive conditions. Moreover, there enters into this question that of profit. With increased expense of production, due largely to cost of food, returns must be greater, either in the shape of enhanced prices or greater bulk. Much has been learnt in other ways, namely, that increased size of body means reduction of number of eggs laid, however desirable it may be in regard to the quantity of meat obtained, and that the most prolific races naturally are those in which there is not a large frame and abundant muscle and feather to produce and maintain. This is of the greatest importance and is sufficient to condemn the striving for large size in egg breeds, for by so doing we sacrifice essential properties.

Flesh Development.

The question naturally arises, How far can further development of various qualities be carried out? That is, what are the limitations beyond which it is impossible to go? It is well known that a large

accession to size of body—that is, individual abnormality in this direction beyond the mean of the race—may be desirable when the animal is to be killed for food; but from a breeder's point of view the losses are greater than the gains, as they are often semi or entirely barren. Or, as stated by Professor Eugene Davenport in his "Principles of Breeding": "Increase of quality cannot go on indefinitely. We cannot breed the horse to be as large as the elephant; or, if we could, there would be an upper limit somewhere. What will set these limits is an interesting question. In some cases, no doubt, the limit would be fixed by purely mechanical principles, in others by physiological restrictions, such as the size of the heart and the labour of circulating the blood; but apparently we have not yet in any line approached a limit so high that variation is not abundantly able to present still higher values." Perhaps if we had a century at our disposal, by steady persistence we might evolve a race of fowl as large as a turkey, and a turkey equal in size to an ostrich, though that is questionable. But, to do so, it would be necessary to allow time for gradual development by fractional degrees, and for giving play to the natural forces so that they might adapt themselves to the changes involved.

Egg Production.

In the case of egg production many influences have been at work, some of which are scarcely realised, possibly others have never been thought of. It is necessary to remember that the improvement indicated above is the result of generations of selection. Sudden developments are abnormal, and seldom can be maintained. The late Professor Henry Drummond points out in "The Ascent of Man" that "the highest part is the latest added part, and the latest added part is the least secured part." The great average increase in egg production which has marked the last few years is not alone due to selection of breeding stock, though that has contributed its share to the result, but also to the introduction of breeds of high fecundity, or which by change of conditions have developed on that line, or which have so responded to the greater care given and more generous food supplied to them. The capacity was there. The influence needed to secure the requisite stimulus was a change of environment. The Leghorn fowl has proved a better layer in America, in Britain, and in Denmark, than in Italy. It may be accepted as true that the alien, provided that the new influences are favourable, is often more virile and productive than the native. Hence we may fairly believe that races of fowls which produce without trap-nesting or any such modern device, or even without rigid selection, say, 100 to 150 eggs per annum, are

the product of long continued breeding, of influences working to that result, and of transference from one set of conditions to another. To bound from the score eggs of the Jungle fowl to the five score of the farmyard would be fatal, were it possible, but to work thereto through a long series of years has been accomplished. Such offers encouragement for the future, provided we realise that success will be achieved by steps, not by leaps, for we have to take into account the fact that excessive production tends to infertility in the first place, to weakening of constitution, until nature has had time to recover her balance.

200-Egg Hens.

Much has been said of late about the 200-egg hen, both in this country and America. That individuals can be secured to produce the number named is well-known, and has been so for a long time. Breeders of Hamburgs well back in the last century could produce specimens with such a record. In Belgium the Braekel and Campine frequently did as much. More than twenty years ago M. E. Lemoine in his experiments at Crosné, near Paris, could tell a similar story. And, did space permit, I could give other examples within my personal knowledge and experience. Nearly thirty years ago I had a dozen White Leghorn pullets which yielded an average of 156 in the first laying year. But all these were the result of operations on a small scale, where attention was given to the birds which was not compatible with extensive poultry-keeping. More recently efforts have been put forward in America to obtain high averages with large flocks, but failure has up to the present marked enterprises of that nature. Individuals and perhaps groups of individuals there were who exceeded the 200 objective. One is recorded which in a single year attained a 186-egg average for 300 hens, but it was not maintained. The most ambitious attempt was at the Maine Experiment Station, where for nine years selection was made by trap-nesting with several hundred birds, under conditions which deserved success. But the end appears to be no better than the beginning. My opinion is that the wrong race was used, the Plymouth Rock, which is not built as a heavy egg producer. That, however, need not now be discussed, though very important indeed is right choice of breed for this purpose. So far as my knowledge goes, the best results have been obtained by the light-bodied, active type of fowl, small in size, with less frame and flesh to maintain. This is only applying the experience gained in other directions. Professor E. Davenport, in the work already quoted, says: "While the large animal of his kind, whether it be the individual or the strain, represents the

greater energy of cell division in body building, it by no means follows that the body when built will possess a greater degree of activity than will its normal or smaller neighbour ; indeed, the opposite is likely to be true, because the larger body works at greater disadvantage, having greater inertia to overcome and more dead weight to carry about. This is eminently true of all animals whose service involves transporting the body from place to place, as among horses. It is manifestly impossible for a heavy horse to equal a light one in speed without the expenditure of far more power in doing it." The fact here stated is equally applicable to egg-producing fowls.

Mutations Unreliable.

Developments that are the result of sudden leaps partake of the nature of what are known as mutations, which are unreliable, for in the case of reversion, always an important factor in breeding, that would be to the original form or quality. If a pullet that laid 250 eggs in her first year had been bred from a hen the average of whose family was 80 eggs, the progeny bred from the former would tend to revert to the 80 standard, and few, if any, would equal the prolific mother. Whereas if the family average were 120, in the case of a 200-egg pullet bred therefrom, reversion would be much less powerful, because the step to be retraced would be much shorter. These mutants, or sports, have been utilised by fanciers in the development of new varieties, but they do not offer much advantage to the practical or utility poultry keeper, who does not desire to weaken his stock by the in-breeding essential to secure fixity of the new type. Excessive fecundity is a variation of faculty, and variations, whilst helpful, not seldom have a tendency to destroy what has already been attained. Risk there must always be in progression, but one of the main objects of the breeder is not merely to maintain what has already been secured, but to develop new types that will better serve his purpose. To that end he must go forward, but make haste slowly. "The race is not to the swift," but to him who is content to take one step at a time. Weakness of constitution, in the progeny at least, results from using as breeders those birds which are abnormal layers. A fatal mistake, in my judgment, has been made in the egg-laying contests in this country by using the birds as breeders in the same season as that in which they were competing, and it is one that has greatly minimised the general benefit of these interesting displays. Had the owners retained the birds unmated to another season, then the advantage would have been much greater. Further, of even greater value as breeding stock are

the parents of a pen of prolific pullets than the actual layers themselves. Without fear of exaggeration it may be stated that the cock and hen from which the first-prize pen, whatever that may be, in the Street Competition is bred, are as breeders worth ten times as much as the winning birds themselves.

Raise the Average Standard.

What we want to do is to raise the average of a breed or family, not to produce a few "sprinters," as they have been called. These are of small value. Production of these may be sportive, but has a very negative influence upon the food supply of any country or upon the economics of poultry-keeping. This average does not mean numbers alone, but size of egg, marketability, and time of year when laid. That average can only be secured by steady, yet sure, effort, by gradual building up of the quality concerned, by maintenance throughout of physical vigour. We want to get rid of the drones, to confirm and develop a faculty which is always in danger of retrogression. Breeding from the abnormal will not help in that direction—in fact, it is probably the worst method, all things considered, that can be adopted. That there will always be drones cannot be doubted, but the fewer the better. The average we should seek to exalt, not the excess of a few. It would be worth ten or twenty years' breeding to raise the mean average of hens from 120 to 150 eggs per annum, and that would be likely to continue, whereas a jump from 120 to 200 eggs on the part of a few birds would probably spell speedy falling back to the original state. What is meant may be explained by an experiment with ears of Indian corn, referred to by Professor Davenport. Corn was planted from seed ears exactly 10 in. in length. From the crop 327 ears were taken at random and measured. Thirty-eight were 10 in. ears ; 32 were larger, ranging as follows: 10½ in., 21 ; 11 in., 8 ; 11½ in., 2 ; 12 in., 1 ; whilst 257 were less, ranging as low as 3 in., but the greater bulk 8 in. and upwards—namely, 8 in., 32 ; 8½ in., 40 ; 9 in., 67 ; 9½ in., 63. The mean was just under 9 in. ; the highest number of any one length was 67 9-in. ears, and the wonderful fact is that taking 9 in. as the mean, there were 127 below and 133 above that size. The thing can be worked out almost mathematically and the probabilities are that there will be about an equal proportion, almost perfectly balanced, on either side of the mean. It would be difficult to conduct a similar experiment with fowls so far as egg production is concerned, but enough evidence is before us to show that exaltation of the average will not be secured by breeding from abnormal layers.

WHO'S WHO IN THE POULTRY WORLD.

MAJOR A. E. M. NORTON,
D.S.O., F.R.G.S.

BBRITISH Colonial Governments are nothing if they are not progressive. With a view to the development of trade with the Mother Country and protection of the interests of producers, several of these have established commercial agencies in London, which are designed to be the eyes, ears, and mouths of shippers, and, through them, of the farmers



Major Norton, D.S.O.

beyond the seas. One of the most notable of these is Major A. E. M. Norton, whose contribution on "Poultry Production in South Australia" in our first number last October will be remembered by readers. His D.S.O. was gained in South Africa, where he served with the Australian contingent during the late war, and was won by valour at Bakenkop, O.R.C., on July 3, 1900. It is, however, in his capacity as commercial agent of the Government of South Australia that we include him in our gallery of worthies.

Major Norton is a Shropshire man by birth, being connected with a family which has for many genera-

tions been associated with agriculture. In Australia he not only took great interest in the broader questions, but gave considerable attention to poultry, which he early regarded on industrial lines as worthy the attention of farmers, especially in view of supplying the needs of the British markets. Connected with the Produce Export Department at Adelaide, he speedily realised that it was essential to study the needs of customers and to adopt those methods calculated to secure the most satisfactory results. To this end it became necessary to change the system in vogue of collection, grading, and packing, and to ensure that the eggs should be maintained at a temperature which would preserve their quality. Moreover, Major Norton became a strong advocate of the export of non-fertile eggs, and the tests carried out under his personal supervision have abundantly proved that this is an important point for over-sea eggs. The results are seen in the growth of South Australian supplies and in the rapid increase of the poultry industry in the colony, where climatic and other conditions are so favourable, thanks to the enhancement of prices received. As it is yet only in its infancy, vast developments may be looked for in the immediate future.

M. ERNEST LEMOINE.

LINGUISTIC difficulties form considerable barriers to international intercourse. Were it not for these, a man like Ernest Lemoine would be as well known to the English-speaking world as he is in his native land. He speaks no English and few English speak French. But his accomplishments have been manifold, though essentially practical in their character and results. He has officiated as judge at many exhibitions in Western Europe, but to him the prime factor was adaptability of the fowls to economic ends. Therefore he can scarcely be classed as a fancier, although he is honorary president for the second time of the "Société National d'Aviculture de France."

Born in 1830, M. Lemoine has attained a ripe age. His life has been largely devoted to the development of poultry-keeping in France and kindred pursuits. He has been maire of Crosné (Seine-et-Oise), where is his home, vice-president of the "Comité d'Encouragement à l'Agriculture et à l'Horticulture de Seine-et-Oise," &c. He has never aspired to be regarded as a scientist, as his ambitions have been essentially practical and for the general good of his country. Nevertheless, he has taken great interest in everything scientific, and has kept in close touch with new discoveries. Specially has his interest been devoted to the encouragement among the young of studies which would draw their thoughts to rural pursuits, and he has sought to inculcate in them the importance of close attention to detail, to hygienic conditions, and progression of method. Half a century ago M. Lemoine went in for the breeding of Sebrights, of Rouen ducks, and of

pigeons. In 1872 he took up poultry-breeding for market purposes, for which he thoroughly studied fattening. In 1873 he began his celebrated poultry farm at Crosné, which was described about 1880 by the late Mr. J. H. Jenkins in his report to the Royal Commission on Agriculture, where he took up the



M. Lemoine.

breeding of pure races. This farm was a model conducted on advanced lines. His first prize was won in 1875, from which time he has carried off the highest honours in the leading Continental exhibitions, including some of the prizes of honour, the securing of which is the ambition of all French breeders.

The different stages of M. Lemoine's career have received recognition by official distinctions conferred upon him. In 1882 he was made Chevalier of the Legion of Honour; in 1884, Chevalier du Mérite Agricole; in 1890, Officer of the same order and also of the Academy; and in 1885, during his visit to Copenhagen, he received the Cross of the Chevalier de Danebrog, which is rarely given, and by this H.M. the King of Denmark recognised M. Lemoine's invaluable labours on behalf of the poultry industry.

MR. W. W. BROOMHEAD.

THE personal popularity of a man is not necessarily proof of his ability in any one branch of study, but when the ability and the popularity go hand in hand, the combination is well-nigh irresistible. It proved so in the case of Mr. W. W. Broomhead at the last election of vice-presidents of the Poultry Club, when Mr. Broomhead headed the list of those chosen and secured a record majority over the next candidate by 112 votes. As is well known, Mr. Broomhead has been on the executive of the Poultry Club for a number of years, and in his capacity of hon. secretary of the redistribution scheme

did yeoman service for the club, whose "Standards of Perfection" he is now engaged in revising.

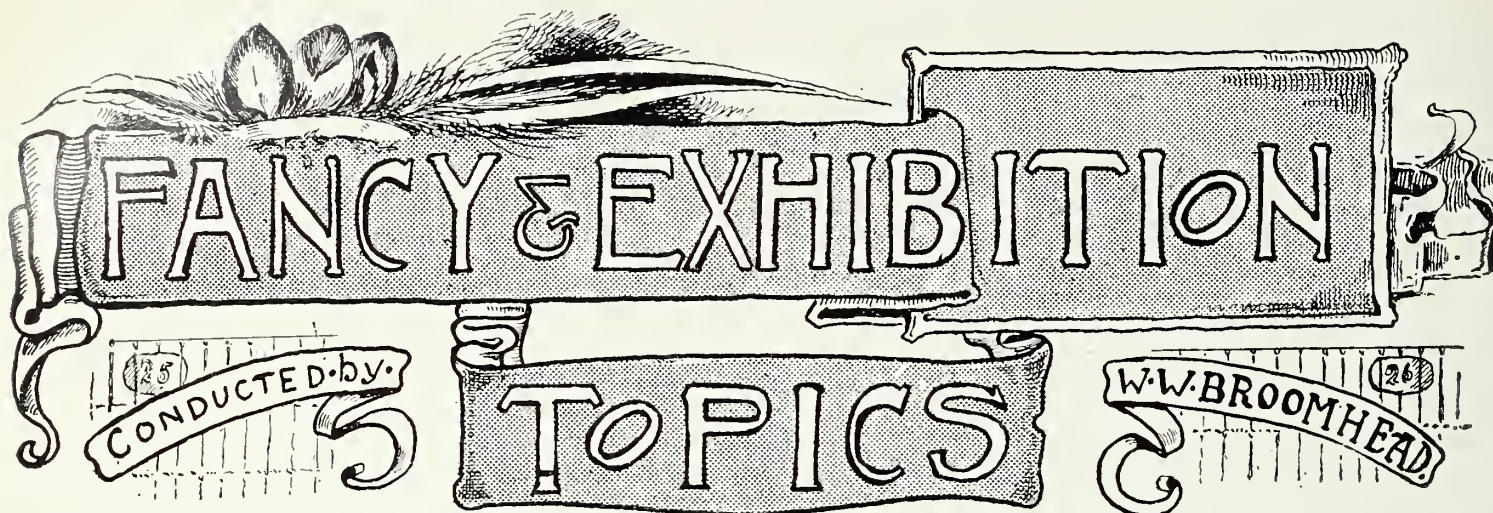
He has been associated with the poultry world since his earliest days and his reputation as an all-round judge is one to be envied. Starting his business career on a fanciers' paper which is now defunct, he became assistant editor of *Poultry* in 1895, and still retains that position. He has given various series of lectures on poultry-keeping under the auspices of two or three county councils and metropolitan fanciers' clubs. His career as a judge started in December, 1901, and since then he has officiated at such important fixtures as the Crystal Palace, the International, the Dairy, the Royal, the Royal Counties, Haywards Heath, Tunbridge Wells, Horsham, Portsmouth, and Cambridge.

Mr. Broomhead's enormous experience of the poultry Fancy stands unquestioned. He has probably inspected more fanciers' establishments and visited



[Photo by RUSSELL & SON.]
Mr. W. W. Broomhead.

more poultry shows in the United Kingdom than any other fancier of the present day. He has never exhibited fowls himself, but he has rarely been without a pen or two. Moreover, in view of the present tendency of the utility man to regard every fancier as impractical, it is worthy of note that for some years Mr. Broomhead had the run of the poultry at a farm in Kent where utility poultry farming in all its branches was successfully carried out.



Toe-Punching Chickens.

To be or not to be? The question came before the Poultry Club Council at its meeting last month, but nothing definitely was decided; in fact, the matter was postponed for a month in order to see if the minute dealing with it and passed on October 4, 1905—"that punch marks be not allowed"—can be rescinded. It is proposed to carry out the markings with plain round holes, not a plain round hole, which makes all the difference. Personally, I cannot see how toe-punching by means of plain round holes can be objected to as a mark of identification for judges, although, at the same time, I fail to understand how these marks can be a means of identification for breeders and fanciers themselves. There is a limit to the combinations of such marks; and it must be remembered that the web of a fowl's foot is not very large. If one were dealing with ducks the case would be different. But I question if more than three holes can be punched on one web without very seriously interfering with that web. Moreover, there is nothing to prevent half-a-dozen breeders using the same combinations. And if the Poultry Club Council sanctions the use of the punch, toe-punching will become general, and it will probably be rare to find a show bird which is not so marked. That being so, how are they to be a means of identification for a judge? That plea should be put aside at once, since, if a judge is going to be dishonest, he will find an easier method of picking out his friends' exhibits than by that of toe-punching.

The Necessity for In-Breeding.

I was pleased to see Mr. E. H. Turrell's letter on the above subject in last month's ILLUSTRATED POULTRY RECORD. There can be no doubt that in-breeding, carefully carried out, is not as harmful as many people are apt to imagine. It is certainly necessary if one wishes to establish a reliable strain of exhibition fowls; also, although in a less degree perhaps, if one aims at producing a good family of layers. One of the greatest authorities on poultry was the late Mr. Harrison Weir, and yet he was much in favour of in-breeding. He once possessed strains of the Old English fighting Game and Golden-spangled Hamburgs, which had been so bred for generations, without any detrimental effect. Many years ago Mr. Weir presented me with a pair of his Hamburgs, and from those birds and their produce I in-bred for four or five generations; yet they lost nothing in vigour or laying qualities, and pullets of

the fourth generation were in every way as good layers as the original hen. I admit that where no regard is paid to health, and the birds are in-bred merely on account of their colour or markings, much damage can be done. But where only thoroughly vigorous fowls are mated in-breeding can be carried on with advantage.

Withholding Prizes at Shows.

Mr. W. M. Elkington has struck the right note in his article of last month, and I am glad to see that such eminent authorities as Mr. L. C. Verrey, Mr. Arthur H. Edwardson, and Mr. W. M. Bell have taken up the cudgels. Something must be done! We are all agreed on that point; but how is it to be done? Some months ago I placed before the Poultry Club Council a scheme which, in my opinion, would have done much to solve the problem; but it did not meet with the approval of the majority, and it was, therefore, thrown out. But some basis should be fixed by that club, to be enforced at shows held under its rules. At an exhibition last month which took place under Poultry Club Rules, second prizes were withheld in all classes of less than nine entries; and as there were eight of such classes out of seventeen, the executive withheld prize-money to the amount of £2 16s. But I greatly question if they were legally entitled to do so under their own rules. The only rule touching the withholding of prizes is that which appears in the vast majority of schedules issued in connection with poultry shows, viz., that the judge will be empowered to do so where, in his opinion, the exhibits shall not be of sufficient merit; the birds in this instance, however, were meritorious enough. Moreover, and this fact should not be overlooked, at the show in question a strong feature was made of "Full prize money." It is to be hoped that some of the fanciers whose birds were wrongfully debarred from winning second prize will test the case in the proper quarters.

A Unique Show.

At an exhibition held late last month—too late for me to get any particulars of it for this month's issue—I see from the schedule that "after all expenses of the show have been paid, a special committee will allot the prize-money (seven days before the show), which will be printed in the catalogue." During my long connection with the poultry Fancy I have had thousands of schedules through my hands, but, so far as I can recollect, this is the first time I have seen such a unique proposal made in connection

with a fanciers' show. Perhaps the association which ran the exhibition cannot be blamed for looking after itself; but it is scarcely the spirit in which to hold a show. It will be interesting to see how the affair was supported, and I may refer to the matter next month.

1909 Chickens.

From a contemporary I learn that very few prominent fanciers have acted upon the recommendations of the Poultry Club's Marking Sub-Committee by ignoring the limit date (January 1) for hatching chickens. Be that as it may, some fanciers have taken advantage of the recommendations and commenced their hatching and rearing operations long before the opening of this year. The old rule was good enough had the ringing of chickens been rigor-

ously adhered to; but as no satisfactory decision could be arrived at on the ringing question something else had to be done. I do not for one instant say that "the bone test," as it has been termed, is an infallible one; but in existing circumstances it strikes me as being the best. Personally, as I have previously stated in these columns, I should like to see chicken classes entirely abolished. They will never be satisfactory and will always be the cause of much complaint, so long as forward appearance carries as much weight as it has done in the past.

varied merits, while its beauty none can gainsay. In Japan, where, of course, these fowls come from, and where they are kept very strictly, the finest specimens not being allowed to be exported, their tails reach prodigious lengths, and there are many artificial ways of feeding and keeping the birds to attain this end, and to preserve their feathers from becoming damaged. For instance, the birds are kept on high perches, like our parrots, and when they are let down for exercise a boy follows them, holding up their long tails. A sort of roller is also fixed on the back of the bird and round this its tail is rolled, or the tails are rolled in tissue paper. The colours in Japan seem to differ from ours, in that the single-combed birds are what we should call black-red, and the pea-combed are pile, while others are almost white, but with some black in their tails. In

England, so far, we have the pure white and the duck-wing, and the tails of our birds do not often measure more than 4 ft. long.

Yokohama fowls seem to have appeared in England about forty years ago, but it is only lately that they have become at all popular. There are good specimens, stuffed, in the Natural History Museum, South Kensington, and there were some birds at the Zoological Gardens for some years. In Japan, Yokohamas seem to moult only once in three years. I have heard that the Japanese breeders pull the feathers slightly at intervals,

and by this means cause the growth to continue with no autumnal moult.

The breed, though tractable and extremely pleasant to deal with, has all the Game instincts in it. The pea-combed variety is undoubtedly the native fighting cock of Japan, and dearly do the cocks love to have a sparring match! And not only the cocks, but "mesdames" stand up to each other in the most aggressive way. They are well able to defend their young, and, like Game hens, they are first-rate foragers and teach their young to catch all the animal life which comes their way.

Just eighteen months ago a club for this breed was started, and I am glad to say it is now in a flourishing condition, new members constantly joining it. It amuses me now to read an article in a contemporary, dated December, 1902, in which the writer stated: "We are not aware that separate classes have been provided for the breed (Yokohamas), and it is doubtful if they would fill to any extent if there were, for at the best there cannot be more than three or



WHITE YOKOHAMAS.

THE YOKOHAMA FOWL.

By MRS. L. C. PRIDEAUX.

AMONGST the most ornamental fowls known we must, without any suspicion of bias, place the Yokohama first and foremost. It has many and

four fanciers of the breed in England." I should put the number of fanciers to-day at nearer a hundred; and there are classes, sometimes as many as four, filling well at all the principal shows. The difficulty of exhibiting the cocks has been surmounted, since arrangements are now made with show secretaries that long pens shall be provided.

The photograph of the pair of duckwings which accompanies these notes was taken for the *Ladies' Field*, while the whites were executed for insertion in the *Exchange and Mart*, and to both of these publications I owe my acknowledgments for reproduction rights.



DUCKWING YOKOHAMAS.

THE RHODE ISLAND RED.

To the Editor of THE ILLUSTRATED POULTRY RECORD.

SIR,—I have read with much interest the article on the Rhode Island Red in your December issue, and I would like to give your readers some of my experiences as an English breeder of this variety. After a careful trial I am convinced that, from a utility point of view, it cannot be beaten. In a very cold and exposed situation I have found the Rhode Island Red an excellent winter layer of a good sized brown egg, very hardy, and a splendid table fowl, its only drawback as regards this latter quality being its yellow skin and legs. A capital forager, it does best on a free range, and in this respect is eminently suitable for the farmer. Its wonderful hardihood enables it to thrive and excel as a utility fowl in cold, bleak, and damp situations which are unsuitable for most breeds of poultry. The chickens are hardy, grow rapidly, and mature very early.

From an exhibition point of view the Rhode Island Red does not seem to "catch on" in this country. This is no doubt partly owing to the breed being so little known, and partly to the fact that the majority of the few breeders that there are appear to lack that enterprise so necessary for the welfare of any breed of fowls in these days of spirited competition. Moreover, there is the drawback that Rhode Island Reds are difficult to breed true to colour, and although this does not, as a rule, act as a deterrent, still, owing to this fact, the number of really good coloured Reds in this country is very small, a good specimen being extremely difficult to meet with, most fanciers having never seen one. As a utility fowl, however, the breed is making steady progress, and as regards this point poultry keepers the world over who have given the Rhode Island Red a trial are unanimous in their praise and commendation.—Yours, etc.,

GEORGE SCOTT.

The Windmill, Pudsey.

WITHHOLDING PRIZES AT SHOWS.

To the Editor of THE ILLUSTRATED POULTRY RECORD.

SIR,—Mr. Elkington's remarks in your last issue come at a very opportune moment, for during the past season this practice has been exercised at rather a good many shows, much to the annoyance of exhibitors and certainly not to the future advantage of the show authorities, for where exhibitors have sent their choicest specimens (in many cases noted winners) to a show and have had to put up with a second or third prize, on account of lack of entries, it is hardly to be supposed that they will support such a show on another occasion. This method of withholding prizes casts a shadow on a bird's career; for example, a certain bird may have won first prize at four previous shows and then, for no fault of its own or on the part of the judge, gets a second. A would-be purchaser comes along, is told the bird's show record, and jumps at the conclusion that the bird is going off, because it was not awarded first prize at the fifth show, arguing very naturally that, if it merited first, why did it not get it? (Undoubtedly, it is far preferable for prize money to be reduced than a merited award withheld.)

Naturally, every society has the one object in view of making its show a financial success, and it is bound in the interests of its members to use every legitimate means of securing the desired end, but not at the expense of its real supporters, the exhibitors. Mr. Elkington's question, as to whether it would not be better if all shows were compelled to have a guarantee fund sufficient to cover prize money, is a very pertinent one, but, unfortunately, in such a game of hazard as a show is, very few care to commit themselves by consenting to become guarantors!

To come to the crux of the matter—the question is, Why does the necessity exist for show authorities to be compelled in self-protection to adopt such

methods as reducing prize money or withholding prizes? I think that careful consideration will show that there are four important points that are the cause, and which are conducive to shows being so often financial failures. The first is that there are at the present time too many small open shows. Secondly, most small shows cater too much for the big exhibitors, neglecting the interests of local poultry keepers. Thirdly, there is insufficient knowledge of show management, and owing to methods often adopted regular exhibitors have become wary; and lastly, the want of support of the general public. With regard to the first, I believe that I am correct in stating that there were nearly 800 shows held in the United Kingdom during 1908, the greater proportion of which were open shows; so that, deducting Sundays, the average roughly is about $2\frac{1}{2}$ shows per day; but as most of the shows are held between September and January, the daily average is enormously increased during this time. Can it be expected that with eighteen or twenty events on one day all can succeed? Again, small societies within a short distance of each other hold their shows on dates too close together. I have in my mind three open shows that were lately held within three weeks of each other, two in one parish and one in the next. Naturally, all sustained heavy losses.

A remedy that suggests itself is that the Poultry Club county branches should license only so many open shows in their counties, making all others limit, radius, or members' shows. Of course, such events as the Dairy, Crystal Palace, Birmingham, the Royal, and other Agricultural Society's shows could be avoided when arranging dates for county open shows.

Until some such regulation is made and carried out small open shows are bound to suffer.

The second point is that so many small societies imagine that by offering an extensive classification they will attract noted breeders to support them, forgetting that if Mr. So-and-So brings his noted team of birds they are seriously handicapping the chances of the small exhibitor, who, though he may be caught once, fights shy ever after. Further, in the generality of cases, the local or members' classes are few and badly arranged, with inadequate prize money—all the real "plums" being offered in the open section, which swallows up most of the funds, to the disgust of the local supporter, who feels it hard lines not to be treated with the same liberality as the exhibitor who shows his birds all over the country. Thirdly, a show is so often organised by those who lack that knowledge so necessary in running a show successfully, large expenses being incurred that could be avoided; for instance, schedules are distributed broadcast, sometimes two or three copies being sent to the same person, large amounts are spent in advertising in an attractive style, where a simple announcement would be quite as effective, and the system of touting for late entries adds greatly to the outlay. Unfortunately, this plea for help has been so abused that many exhibitors have become wary, whilst some wait for the remainder, knowing full well that they are sure to receive it.

Lastly, in most cases too much reliance is placed on the gate money to meet any deficiency that may arise. This usually proves a broken reed to lean on, for, unless there is some other attraction connected with the exhibition of poultry, such as an agricul-

tural or horticultural show, the general public take little or no heed of the affair, only those really interested in the event being the local fanciers, who are comparatively few in number.

To sum up the whole matter, I fear that until some drastic measures are adopted to limit the ever-increasing numbers of small open shows, so long will the objectionable practices of withholding prizes and reducing prize money be continued.

Revolutionise the existing state of things by transforming the many small open shows into purely radius, local, or members' shows, the objections will disappear, local interest in poultry matters will greatly increase, and then the statement of accounts of many a struggling society will show a balance on the right side.—Yours, etc.,

L. C. VERREY.

The Warren, Oxshott, Surrey.

January 13, 1909.

To the Editor of THE ILLUSTRATED POULTRY RECORD.

SIR,—I have read with interest the article "Withholding Prizes at Shows," by Mr. W. M. Elkington, which appears in this month's ILLUSTRATED POULTRY RECORD.

The subject is one about which I have always held strong views, especially in connection with shows held in small towns and villages throughout the Kingdom.

It is a well-known fact that poultry shows do not pay. Of course there may possibly be a few exceptions, owing to the generosity of some kindly disposed persons, but, generally speaking, unless there are additional attractions, exhibitions of poultry only mean a loss to the promoters; hence exhibitors know perfectly well there is a certain risk as to the payment of the full amount of prizes awarded, consequently if they elect to accept such risk and disappointment follows it is a matter about which they ought not to complain, especially if the regulations included in the schedule of the show stipulate for the withholding of any portion of the prizes offered, no matter how or under what plea such deductions are made.

We must all admit shows of every description are speculations, and unless the printed regulations clearly state what prize money those promoting the show intend to withhold under certain conditions, then the exhibitor is legally entitled to the full amount as announced in the schedule and awarded to his exhibits.

Of course, every judge is justified in using his discretion as to which prize or prizes he awards, providing there is a regulation to such effect; otherwise he is bound to award each prize announced in the schedule, providing there are sufficient exhibits in the respective classes.

The fact of certain prizes being offered for competition is *prima facie* evidence same will be paid, and it is absolutely immaterial to exhibitors where the committee obtains the money for the purpose; further, I am of the opinion it is no concern of exhibitors whether the prizes are paid out of subscriptions, gate money, or the pockets of the promoters, but each member of the committee is in duty bound to see exhibitors are paid the full amount of their winnings as provided in the prize schedule; then, if they incur a personal loss, an appeal to the prize winners is not always, by any means, made in vain.

I do not agree with Mr. Elkington's expression re

a "guarantee fund sufficient to cover all prize money" being a hard rule; further, if committees of "innumerable small shows" held, as I have previously mentioned, "are granted a loophole" to gull and deprive inexperienced and amateur exhibitors, after accepting their fees, then the sooner they are wiped out and the Fancy purged of such dishonesty the better it will be for all, including many budding exhibitors.

If show promoters clearly state in the conditions of competition they intend to award only a portion of the amount offered as prizes, or to reduce the number of prizes in certain eventualities and exhibitors omit to read the announcement, then they alone are to blame.

In my opinion exhibitors should not tolerate the amalgamation of classes under any circumstances; therefore, where committees reserve the right of adopting such a manifestly unfair course, exhibitors should not make any entries, then the desired result would soon be achieved and the amalgamation of classes become a thing of the past.

Though I would like to discourage any system which prevents the advertised amount of prizes in any class being reduced, at the same time I would not seriously object to the system of prizes being offered on the sliding scale principle, especially in connection with those shows held in small towns or country districts, or where a show is held for the first time, but always provided such a stipulation was clearly stated in the prize schedule. Then all would have the opportunity of knowing before they made any entries what might happen under certain eventualities.

Mr. Elkington says, "There is one grave objection to the adoption by the Poultry Club of a rule permitting the reduction of prize money," and then illustrates how the entries were affected at a certain show where the plan was adopted this year, clearly proving such a rule is unpopular. Therefore, is it at all likely show committees generally would thus court disaster by including any such rule? Hence it is to be hoped the Poultry Club will not tolerate such an arrangement.

The privileges offered by a show committee to competitors who pay the necessary entrance fee should be clearly set out equally with the amount necessary to entitle a person to compete for prizes, and while exhibitors are called upon to fulfil their part of the contract, show committees should be equally particular in carrying out their portion of the agreement.—Yours, etc.,

ARTHUR H. EDWARDSON.

6, Hamilton-square, Birkenhead.

January 9, 1909.

To the Editor of THE ILLUSTRATED POULTRY RECORD.

SIR,—I read with much interest in your last issue Mr. Elkington's article on the above question, and certainly agree with him that, were it possible, it would be very much in the interests of exhibitors if all shows could be compelled to have a guarantee fund to cover all prize money. There would, however, be a difficulty in this, as it is always hard work to get sufficient guarantors in the first place, and should a show happen to fall on a bad year through clashing with other shows, gate affected by weather or counter attractions in its particular town, or numberless other things that might happen one

year and not another, it would be almost impossible to get sufficient guarantors to come forward again after having been once called on.

To my mind the most equitable arrangement to guard against loss on shows that cannot depend on a good gate to increase their finances would be a sliding scale system; but in order that a society should not take undue advantage of this, the society should not be allowed to bring this arrangement into play when their general average of all classes exceeds a given number, say nine or ten entries, either of which number would be considered a fair average at a great number of shows.

As Mr. Elkington truly remarks, fanciers very often think twice before showing at any show in which the sliding scale system is in force, but this could be partly met by the society offering additional prizes in all classes containing, say, twelve or more entries.

Apologising for having taken up so much of your valuable space.—Yours, etc.,

W. M. BELL.

St. Leonard's Poultry Farm, Ringwood, Hants.

January 12, 1909.

To the Editor of THE ILLUSTRATED POULTRY RECORD.

SIR,—I was pleased to see Mr. Elkington's remarks on the above subject in last month's ILLUSTRATED POULTRY RECORD, since it is one which can well bear discussion, and from which some good should result.

I have always been opposed to the withholding of prizes, because, in my opinion, it is a most unfair proceeding, when no mention of it is made in the rules governing the show. With the object of getting some definite decision on the question, I brought the matter before the Poultry Club Council at its meeting held on July 10, 1908. In order to check the, to me, unsatisfactory plan of withholding prizes at shows on account of short entries, I suggested that prize-money should be paid on the following basis:

In classes of three or less entries one quarter prize-money.

In classes of four to six entries one half prize-money.

In classes of seven to nine entries three-quarters prize-money.

In classes of ten entries and over full prize-money.

In all classes where the entries admit of it the whole of the prizes scheduled should, together with the specials, be awarded, unless, in the opinion of the judge, the specimens are not of sufficient merit.

I based the foregoing figures, after going carefully through several hundred schedules, on an average entry fee of 1s. 6d. for money prizes of 10s. first, 5s. second, and 2s. 6d. third; an entry fee of 2s. for 12s., 8s., and 4s. prize-money; an entry fee of 2s. 6d. for 15s., 10s., and 5s.; and one of 3s. for 20s. first, 10s. second, and 5s. third.

I made the suggestions with a view to obviating the unfair practice in vogue by some show secretaries of advertising in their schedules that full prize-money will be paid, and at the show requesting the judge to withhold certain prizes, nominally for insufficient merit, but actually because entries in certain classes were short. My suggestions, however, did not meet with the approval of the majority, and the club decided: "That at shows held under club rules no prizes be withheld, but the basis on which prize-

money be paid be left to the discretion of the committee of each individual show, the basis for the payment of same to be clearly stated in the schedule, so that prospective exhibitors know exactly what to expect." That ruling of the Poultry Club would no doubt have met the case; but in how many instances was it carried out last season? And one might not unreasonably ask, Why did not the Poultry Club Council see that its rule was enforced?

It will be seen that with regard to my figures the maximum entries in each case would practically cover the prize-money. There are, of course, other expenses incurred in connection with the running of a poultry show, such expenses as judges' fees, pen contractors' charges, and other items; but has a committee any right to expect to run a show and pay all debts out of the entry fees received? In view of present-day exhibitions, certainly not. And unless there is a guarantee fund or a good subscription list, much reliance has to be placed on the cash which is taken at the gate. In many cases, however, too much reliance is placed on the gate-money, with the result that, should the weather prove unpropitious, the

show is a financial failure and the prize-winners generally have to suffer.

That is one view. The other is that the successful exhibitor has the credit of winning. But wherein lies the credit when a recognised excellent specimen has to be content with a second or a third prize because the higher ones, on account of short entries, have been withheld?

The "sliding scale" of paying prizes does not find favour with many exhibitors at present, and it must be admitted that the comparatively few shows which have adopted it have not had record entries. But things have a way of righting themselves, and if some such basis as that which I placed before the Poultry Club Council, and which I still consider a suitable one, were universally adopted by obviously the smaller shows (it is very rarely that prizes are withheld at the biggest events of the season) I candidly think that it would eventually give satisfaction. At any rate, it has the merit of being just, which cannot be said of the present method of withholding prizes.—Yours, etc.,

WILLIAM W. BROOMHEAD.



Servian Turkeys.

Usually at the Christmas season the London market receives a fair supply of turkeys from Servia, but although several hundred cases were dispatched last year they were delayed on the road and did not arrive in time. Transit generally takes about ten days, but this time twenty did not suffice. Why that should be so remains to be inquired into. The result cannot fail to entail a heavy loss on the shippers. Servia is a country which is very suitable for turkey-raising, but its geographical position makes it dependent upon other countries for outlets to the British markets, otherwise a considerable trade might be done between the two countries. With non-perishable goods an alternative route is via Salonika in Turkey, but that is too slow and expensive for food products, which must come overland.

Italy and its Poultry Products.

The terrible and awe-inspiring calamity which recently overtook Sicily and Southern Italy, and which increased in horror as fuller records arrived, did not touch the districts where poultry-keeping receives its

greatest share of attention. The provinces of Ancona, Emilia, Venezia, Lombardy and Piedmont, that is, the area to the east and north of the Apennine Mountains, are more favourable to this industry than the hot plains to the south. Unfortunately there has been a large amount of disease, more especially in Emilia, which explains the reduction of supplies within the last two or three years. This is due to the increase of the number of fowls and turkeys kept without greater distribution over the land, as they are crowded around the homestead and in many cases kept within very small enclosures, where the ground rapidly becomes tainted and disease results.

Prices of Eggs in Bulgaria.

From statistical returns, for which we are indebted to the Minister of Agriculture at Sofia, the prices of eggs in the various towns of Bulgaria during last September ranged from 4 fr. (3s. 3d.) to 6 fr. 50 c. (5s. 3d.) per 100, which shows a considerable advance on those obtained a few years ago. These eggs are all white, or nearly so, and small in size, ranging from 13 to 14½ lbs. per 120, so that it is scarcely to

be wondered at if the trade does not grow very rapidly. Large quantities are dried and exported to America in the form of albumen. Attempts are being made to improve the breeds kept, but the work is slow, which is due to the undeveloped state of the country and the uncertainty of political affairs.

Croad Langshans in France.

Monsieur L. Miguard, proprietor of the "Voitellier" Poultry Yards of Mantes (Seine et Oise), writing in

DANISH NOTES.

(From Our Danish Correspondent.)

Table Poultry.

The illustration sent herewith was taken at a dead poultry show recently held in Copenhagen, at which were exhibited a considerable number of well-fatted birds, fowls, geese, ducks, turkeys, and pigeons, and a nice collection of eggs from different breeds. The photograph is that of a display made by one breeder,



MR. CASTENSCHIOLD'S DISPLAY OF POULTRY.

the French poultry paper *L'Aviculteur* on the Montpellier International Poultry Show and Congress says: "In the Croad Langshan Classes, Mr. Gurney, British Consul, Marseilles, and vice-president of the Croad Langshan Club, carried off all the prizes. This is not surprising, as Mr. Gurney, who is a great admirer of this breed, has far more than twenty years improved it by careful selection. The Croad Langshans shown by him at Montpellier are really splendid in shape and colour. At Paris in February a number of really perfect Croad Langshans will be seen, of the type which some of our readers will remember having admired at the Paris International Poultry Shows in 1906, 1907, and 1908. A new life is being given to this excellent breed of fowls, which has been somewhat neglected in France in recent years."

Mr. Castenschiold, of Ussinggaard, by Losning, in Jutland, who is going in for Faverolles and Coucou de Malines alone, and who has set up the cramming process on a large scale. To the left of the illustration are to be seen the above-mentioned breeds in fat condition; in the middle are the common Danish fowls; and to the right Danish young geese, turkeys, and ducks. This collection secured the first prize, and the show proved to be the best yet seen in the country, where not much attention has heretofore been paid to table poultry.

Poultry Department, Royal Veterinary College, Copenhagen.

In the year 1903 there was established in connection with the Royal Veterinary and Agricultural

College, Copenhagen, a special department for dealing with poultry, the head of which is Professor Carl Hansen, who has taken great interest in this branch of study. The building devoted to poultry consists of three rooms, with accommodation for ten or twelve cages in each. These cages are made of galvanised iron and are built in two tiers. The walls and floors are perfectly smooth and can easily be washed. In each cage is a perch, and on top is a small blackboard, whereon are recorded the various particulars with respect to the patient, so that the case can be traced throughout. One of

the objects is to afford the veterinary students an opportunity of gaining a good practical instruction in the diseases of poultry, and to awaken an interest in a branch of veterinary science very little studied. One result has been to enlarge the scope of veterinary surgeons throughout the country, and another is that professors at the college have undertaken investigations in fowl tuberculosis as compared with animal tuberculosis, which investigations are under the charge of Drs. Ellermann and O. Bang.

W. A. Kock.

POULTRY-KEEPING IN OTHER LANDS.

By WILFRID H. G. EWART.

FOR years and years—for centuries one may say—the British people have been set upon a pinnacle as regards stock-breeding—as regards the production of horses, cows, sheep, and stock generally; and from their pinnacle they have watched with pride and some contempt the efforts of their neighbours—not with jealousy, because those efforts have never until lately been considered very serious or at all competitive. A time has come

now—and it might well have come very much earlier—when the exclusive position of the English stock industry is being assailed, and if it is to maintain the status of the greatest stock market in the world, then English breeders will have to awake and be very much alive to the exigencies of the situation. And this must be recognised: that the world—quite apart from Great Britain—is a far cleverer place than it was fifty years ago, and that



BROODER HOUSE, HÖR, SWEDEN.

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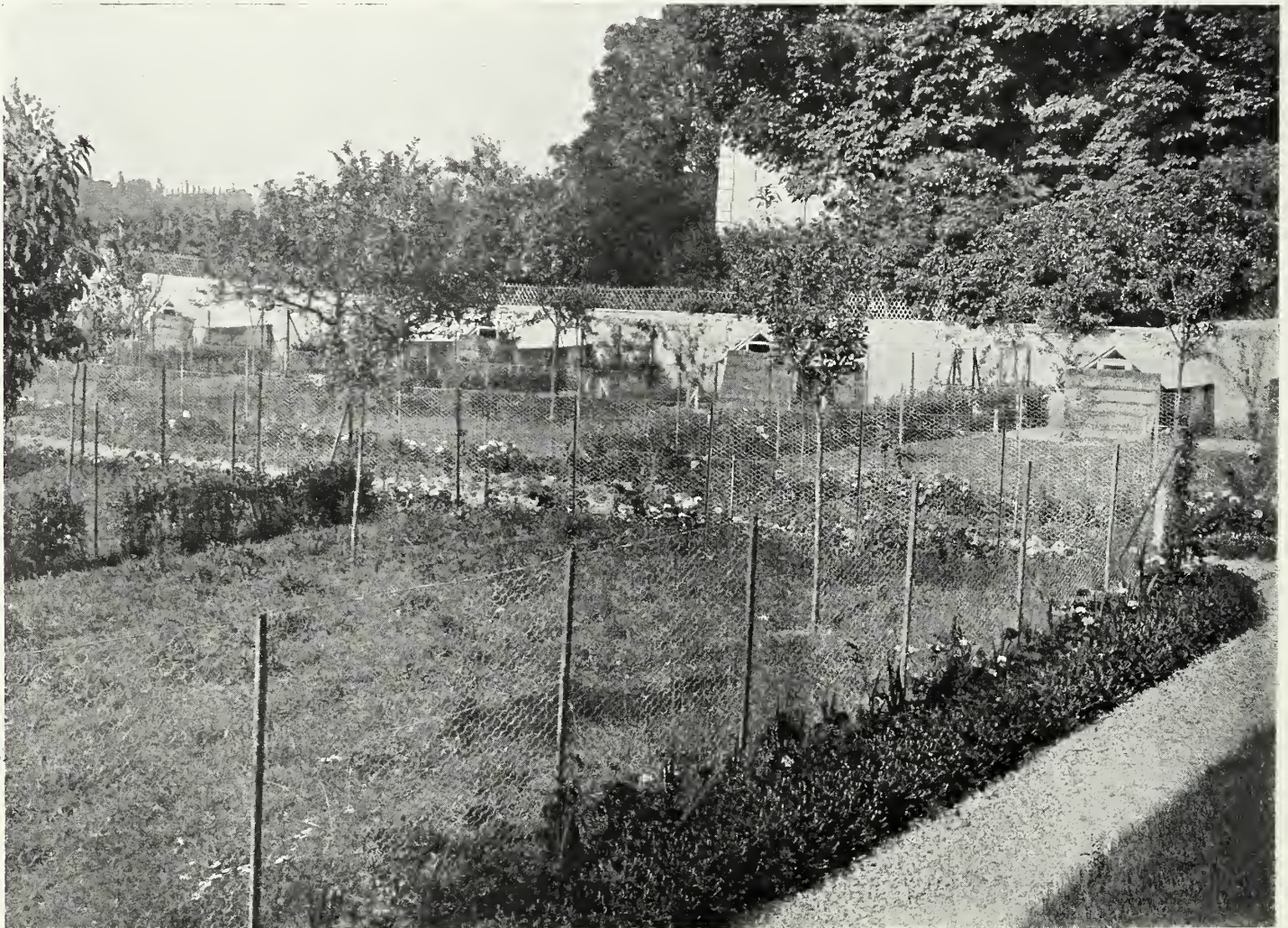
where there is commerce there must also be competition.

These matters, it is true, do not concern us as poultry keepers very acutely, but to some extent we are affected thereby. The field of exhibition breeding, for instance, is far from being wholly ours. We have the Americans to fear—a people whose existence has been progressive from beginning to end, and under whose feet the grass has never been allowed to grow. I do not intend to think or admit that the people of the United States are our equals as breeders of poultry, but I do believe that, whereas the mainspring of our own fancy is competition, the mainspring of the American fancy is progression, which two are very different things. Were competition taken from the one the whole fabric would collapse like a pack of cards, all initiative and effort would be gone out of it, and there would be neither fancy nor fanciers. The other, however, even if competition were gone, could, I believe, exist solely on its own foundation of progression, but—there is just the difference between the British and the Yankee temperament.

As matters stand at present, however, we can truthfully claim to be at the head of affairs as regards exhibition poultry. American methods of breeding are often clever, but according to our ideas they are unsound—they smack too much of the theoretical rather than the strictly practical. One imagines a

crack American bird to be the result of an experiment rather than a system, which doubtless is sometimes the case. As in everything else to which the United States turns its hands, poultry-keeping is of the nature of a mania, and it is the object of the maniacs, as a rule, by no means to achieve merely satisfactory results, but rather to dazzle the eyes of the public by figures or big things, or new things, or old things served up as new, or anything, in fact, that will produce a sensation. On that account one is sometimes reluctantly constrained to place very slight faith in what is told us or in what we are asked to believe concerning certain systems of feeding, certain systems of housing, or certain experimental results said to have been obtained in the land where everything is wonderful, new, and—if Americans are to be relied upon—better in quality and quantity than anything to be found elsewhere.

Matters of this kind notwithstanding, we are compelled to admire the States as a poultry-keeping country, and beyond doubt it is a fairly close second to ourselves. That being so, it is interesting to turn to the colonies—Canada, Australia, and South Africa—and note the steady progress being made by them and their enthusiasm in matters of poultry-keeping. Of the three named I should say Australia is the most progressive. Its Government and Press are in the one case far-seeing and in the other generous, which qualities make operations on a large scale far simpler



VIEW OF PENS, GALLINA, RUEIL, FRANCE.

[Copyright.]

than they will ever be in this country. We have an object lesson—no more than an object lesson—of how a laying competition can and should be run, and after such a lesson one does not wonder that some “utility gentleman” should yearn to do likewise—to run a laying competition on a gigantic scale, to produce eggs on a proportionate scale, to break records on a similar scale, to keep hens on an unheard-of scale, and generally to astonish the English poultry world very much indeed. It is not surprising and it is highly laudable this, but unfortunately, as has time and again been pointed out, outside of Australia, or, at any rate, in the British Isles, it is impossible. I personally fear this is pursuing an ideal that never will be real, for where are the State grants, where the newspaper enterprise? That is the point—where? Of the former kind there is one on record, and it, one must allow, was meagre enough.

However, laying competitions are not now the point. The point I wish to make clear is the excellent progress that is being made in a country where State aid is being practically applied. There can be no doubt of the progress. It is perfectly manifest in almost all branches of poultry-keeping work, one of the most important being the cold storage branch. Here everything is satisfactorily carried out, and Australian cold-stored poultry is some of the best of its kind obtainable. Yet it is a Government business. In England we should consider this a very doubtful advantage, but in Australia things are different.

Of Canada similarly, though in a lesser degree, the same thing may be said. The Canadian farmer is educated by his Government up to the advantages and opportunities of *all* departments of his work, and, to judge from results, one would imagine that he profits from his more or less gratuitous education, that he has at least an open mind on all points, and that he is fully alive to every possibility of his profession. Such, doubtless, is the case, and if the English farmer ever becomes willing to learn anything from anybody, then, say I, let him take the Canadian farmer for his model.

So far as I am aware, State aid is not applied very zealously or extensively in South Africa, but none the less this land of turbulent colonists holds out poultry-keeping possibilities that are only just now being developed. That it will ever become a great poultry-farming country I do not believe, but owing to the large number of native Britishers settled within its limits it imports, and will probably continue to import, annually a large amount of fairly valuable pure-bred stock, which almost exclusively emanates from England. This is satisfactory—very materially so to some of us—but even more pleasant is it to know that the destinies of the poultry industry are presided over by an association—not a figure-head of an association but an association proper, which may also be known as an organisation, and which should always denote something tangible. South Africa also has at least two good shows, one of which is, I believe, managed by the Poultry Association. There are probably several besides these that are equally well conducted, but in any case South Africa is doing exceedingly well for a “little ‘un.”

Nearer home old methods and old ideas naturally hold foremost place in countries forming part of that section of the earth known as the “old World.” They have moved little, these ancient countries, in matters of agriculture and husbandry, and while new industries come and old ones go and things are changing and moving onwards in their midst, it is enough for them to sit quite still and look on. France is one of these; Austria, Italy, Germany, all are alike—in poultry matters at least they are almost entirely devoid of enterprise. It is often said that France can teach us much, but I think differently. On a certain point—that of egg production and marketing—she is our superior, but beyond this one point what can she teach us? Maybe the idea is to make our poultry industry a cottager’s or a small farmer’s business, which is no doubt a very choice and a very pretty idea; but is it practical? I should say not.

One must discriminate. France, though a big country, is none the less a country of small people—small peasant farmers and holders, whose advantages in certain phases of *petite* culture are obviously considerable. The objects of their attention are exceedingly limited—a few cows, a few pigs, a few goats, and the chickens, that is the stock-in-trade of Jacques Bonhomme. Over here it is so different. Big farms of several hundred acres abound. There are cows in hundreds, sheep in thousands, pigs, and horses distributed among a few in a certain district; what chance to develop has *petite* culture? Luckily, there are also poultry farms, many of them, and there is a Fancy; these thrive, but there is no *petite* culture business—moreover, there is no room for it.

And this applies equally to Denmark. Denmark has a very nicely regulated egg industry, whose supplies we are right glad to have in default of our own. Here we must frankly acknowledge she is far ahead of us, and in this matter at least it must be allowed she has been distinctly enterprising. A few years ago her Government imported Leghorns from Italy with the idea of improving the national egg output. It was an enlightened proceeding, and one that has borne fruit, but because of it England should not be expected to follow suit and do likewise. The conditions of the case are entirely different.

Differences though there may be, however, in customs, ideas, and climate in the various quarters of the earth, there is still between all poultry keepers a very real and common interest bred of a common profession or a common hobby. In all “Fancies” there is necessarily a certain camaraderie, a certain spontaneous friendship, which is natural enough. In the poultry fancy I think one finds something more real, more unselfish, and less egotistical than that; where poultry fanciers meet, the interest is not as a rule self-centred, but is, on the contrary, shared by and common to all. So it is that they like to know about each other and hear about each other’s doings. There are poultry-keepers, I believe, in every part of the globe—in almost every land upon which the sun rises and sets. Very many of them are Englishmen born and bred, some are Colonials, others Americans, but all have this mutual interest, and all in this common pursuit find sympathy—the surest and strongest kind of sympathy in the world.



South Australia.

Mr. D. F. Laurie's report to the Government of this colony for 1907-8 is very satisfactory reading, as there appears to be growth on all sides. The total export from the State in 1906 was as follows: Eggs, £122,210; table poultry, £20,000; total, £142,210. Prices have ruled high, but complaints are made that large quantities of unsound eggs are marketed, causing an estimated loss of £50,000 annually. It is reported that upwards of 1,000 persons visited the poultry station at Roseworthy College during the year. An announcement is made that it is hoped before long to report the establishment of a fattening station, we presume at Roseworthy. The report is well illustrated and shows what is being done at the Antipodes. We reproduce two photographs from this report on the next page.

On the Pacific Slope.

References were made in previous issues to the growth of poultry-keeping in British Columbia and to the large and growing demand for eggs and chickens in that colony. An attempt is about to be made to establish a large poultry plant on progressive lines, the proprietor of which—Mr. Geo. H. Threlfall—sailed for Canada a few days ago, taking with him a large stock of birds, purchased from English breeders, and of British appliances. He was accompanied by an old Sussex crammer, whose knowledge in the preparation of fowls for market should be the means of improving the table poultry in Western Canada. Mr. Threlfall is investing a large amount of money in his enterprise, which will include high-class stock and the production of eggs and chickens.

Cape Colony.

Apart from the specialist Press, the influence of general newspapers on the development of the poultry industry has been very great indeed. We are glad to see that this fact is recognised in South Africa. Among our exchanges may be mentioned the *Cape Mercury*, whose weekly notes on poultry are eminently practical and cannot fail to leave their impress upon farmers in that Colony. Our experience has been that by such means multitudes

of people are reached who are not readers of ordinary poultry publications.

A Healthy Pursuit.

There is an aspect of poultry-keeping which deserves recognition, namely, that of recreation, by which is meant not merely pleasure but recuperation of physical vigour. The more intensive the life, the greater the need for some hobby or pursuit to give play to faculties other than those employed in the ordinary daily labour. This fact is emphasized by the *Natal Mercury* as follows:

Poultry-keeping is a healthful occupation, for there is the out-of-door work connected with it, so necessary for the constitution after being closely confined to the office or workshop all day, and the exercise to be obtained is equally beneficial for the system, for there is always something to do that will bring all parts of the body into active operation.

Kaffir Poultry-Keeping.

Great are the possibilities for poultry-keeping in South Africa, and not least in the Transvaal. The following notes are contributed by D. G. R. to the *Agricultural Economist*:

The Kaffir does not attend to his poultry in any way, but simply leaves them to their own devices. When he requires a little sugar, or meal, or tobacco, he takes a couple over to the store and exchanges them for these commodities. When the trader has got a sufficient quantity together he packs them in crates and sends them to the town by the first wagon that comes along. You can purchase fowls in the native territories for a ticky (3d.) each, and ducks in the parts where the natives breed these birds for 6d., but they are very poor specimens. In the Transvaal some of the Boers keep a few fowls and an odd goose or turkey, but they do not follow the industry in any systematic way, the reason they give for this lack of care being that it does not pay to keep birds. . . . Fowls and ducks fetch high prices in the Johannesburg market, and are practically unobtainable by the private resident, as the hotel and boarding-house keepers purchase all that are brought in. Roast fowl is still the greatest luxury on a boarding-house bill of fare, much to the disgust of the arrival from the northern territories, who has probably existed on fowl and nothing else for months past. Neither the Boers nor the Kaffirs ever eat fowls, but the European in town longs for them in vain.



VIEWS ON MR. TOM'S POULTRY FARM. KOONUGA, S. AUSTRALIA

EGG PRODUCTION IN NEW SOUTH WALES.

[BY OUR SPECIAL CORRESPONDENT.]

IN many ways the Australian States, like other new countries, have become prominent in the Old World through the enterprise and genius of their citizens. There is no doubt the race for riches has a great deal to do with this. People leave old countries for new ones, to succeed. Those who are content remain behind. An assimilation of races, all with one intent, takes place, and the desire to rush for wealth becomes inherent. Necessity is the mother of invention, and the necessity for a man to become a hustler becomes very great in the new country. This sharpens the wits, and the brain becomes keener in thought and more active; the outcrossing of races and the salubrious climate make the body physically stronger for assisting the intense working of a well-developed brain. Scotland has produced a greater number of scientists pro rata than any other old country, simply through compelling influences, and the necessity of producing eggs at a low productive cost has placed China well in the front of many old countries in average egg production. In China eggs are sold at one halfpenny per dozen, and the heathen Chinese cuts off the head of any hen that does not lay enough eggs to pay for the food she eats. There is no scientific method adopted by poor John, but he gets there all the same. Necessity compels him. The necessity of intense egg production at a low cost made the Australians breed and feed scientifically for eggs.

There are very few people in this mighty continent—many acres and few men—and while shows are far more numerous in Australia pro rata than in Britain, more generally supported, and the number of fanciers greater, there are not enough people to make stud poultry-farming payable generally. This observed, the great majority have had to look to general sales, and, after a study of commercial meat farming and egg farming, the conclusion has been arrived at that egg farming in Australia would pay. Many have entered the lists without experience of any kind, and with very little to guide them in the way of literature. Although such works as Lewis Wright's and other books are looked up to by the writer, there is no hesitation on his part in saying, and this is accepted generally, that the climatic conditions and environment make them of little value specifically to profitable egg production in Australia. This led to an enormous inquiry for reliable information under Australian conditions, and not only Australian conditions, but those existing in any other country. The question of data, how to evolve it, became important, and the egg productive experiments were started at the Hawkesbury Agricultural College in Australia, followed by every State in the Commonwealth under Government supervision, and in many cases privately. The experiments have been going on in Australia now for seven years,

and the poultry farmers of this great continent know seven times as much as they did seven years ago. The average per pen in the first test was 130 eggs per hen and in the sixth 173, an advance of one-third, or 6s. 8d. in the £ sterling. There is no doubt that this represents the general advance in egg-production of the State of New South Wales among poultry farmers, and if the Government of that State could bring the general farmer and the poultry cottager up to the same average, the added wealth of one-third or 6s. 8d. in the £ sterling, would be a tremendous increase.

Egg production in New South Wales is the best in the world. In no other country could the profit of 12s. per hen be attained. This was done in New South Wales. Just think of a value of 150s. from six hens in twelve months, an average value of 18s. per hen per annum, while the average price of eggs tallied out at 1s. 4d. per dozen! The average prices of food-stuffs, I believe, are about equivalent to English prices. The first year the averages were: Maize, 4s. 3d. per bushel; wheat, 4s. 8d.; pollard, 1s. 3d.; bran, 1s. 3d. The second year: Maize, 3s. 6d.; wheat, 4s.; pollard, 1s. 3d.; bran, 1s. The third year: Maize, 2s. 6d.; wheat, 3s.; pollard, 9d.; bran, 9d. Fourth year: Maize, 3s. 6d.; wheat, 3s. 6d.; pollard, 1s.; bran, 9d. Fifth year, Maize, 2s. 9d.; wheat, 3s. 3d.; pollard, 1s.; bran, 11d. Sixth year: Maize, 4s. 3d.; wheat, 4s. 1d.; pollard, 1s. 2d.; bran, 1s. 1d. And the general average, extending over the whole term: Maize, 3s. 6d.; wheat, 3s. 9d.; pollard, 1s. 1d.; bran, 11d. These six years represent a high value cycle of seasons.

The test has demonstrated to Australians that with constant work and attention, and working on the experience of the data published from the results, egg production in the State will pay well. Fens must be well fed; the old style of skimp feeding has been exploded; the old saw, "Feed hens just as much as they will eat up clean," which was common all over the world, has been wiped out of all poultry literature, and the new saw, "Feed full and plenty," has taken its place in all up-to-date writings. "Full and plenty" feeding will not make good laying hens too fat; those exceptions that do get too fat to lay make good specimens for the pot. This is one secret of egg production—that maize can be made part of the rations for poultry. This must astound English writers. Although, perhaps, maize would be no advantage to English poultry farmers in cheapening the cost of egg production, yet it is just as well to know that maize can be safely utilised in feeding laying hens, even in a warm climate. In maize growing countries it is very valuable to have discovered this. Hens will lay better without males, and most people knew this years ago, though they failed to act on the knowledge, but there are plenty who admit they did not know. Divisional pens and warm but well ventilated houses have proved the best for winter egg production. With us winter eggs mean money; our prices fluctuate from 6d. to 3s., so that it is the wideawake man, who follows up the advice received from these tests, who reaps the profits; the others reap the whirlwind. There are winter-laying breeds and summer-laying breeds, and this has been clearly demonstrated. All breeds lay more or less in the fall and winter.

Good breeds must be chosen, good winter-laying breeds must be selected, good strains must be looked for, healthy stock must be found, in-breeding must be guarded against, but breeding in must be understood as a science and carefully resorted to. The general principle of chick-rearing must be learned, and chicks hatched out at a particular period of the year to catch the high-priced egg market, and that must be repeated yearly. Males must be killed off at five or six weeks, and pullets well fed and hurried on for fall-laying, and all hens laying under 200 eggs marketed at the sign of the first stoppage of laying for the moult. All breeding males should be young and brought from a part of the same country where the climate is different; they must be closely related, and be replaced yearly from the same strain but from different portions of the country.

The five-years' tests demonstrated how to breed, what to breed, when to breed, how to feed, what to feed, when to feed, and the two-years' tests may serve to prove how the excessive mortality of ovarian causes can be reduced. To breed pullets to lay up to 300 eggs per annum or, in other words, how to produce egg machines, has been illustrated; how to keep the machine from breaking up under the strain has yet to be investigated. The breeds which have been demonstrated as the best for egg production in this State are White Leghorns, Black Orpingtons, and Silver Wyandottes; that is the trinity in egg production in this State. Chinese Langshans have given a magnificent result, and shown what China can produce, but the breed is not kept in sufficient numbers to be classed at present. Hundreds of people often ask the question as to which is the best breed, and writers reply there is no best breed. Technically right, practically wrong.

The three breeds mentioned are the best egg producers in this State, and the question is a settled one in that respect. Poultry farmers are and have been, since the introduction of these tests, breeding for a systematic increase in egg production, and although they do not know everything yet, they have succeeded well, and are still learning and improving their flocks. These tests have astonished the world in the question of what hens can lay, but greater things are looked for here. "Look through the tests," says one writer, "see if there are any points done better than you can do them, and then adopt the best of them." A pen of Silver Wyandottes at the top, a pen of Silver Wyandottes at the bottom. "Ruined!" says the competitor at the bottom. "Not at all," says the writer, "go and do the same as the man at the top"—and he did, and was, if not at the top, very near to it with the same breed—not the same strain—at a later private competition.

Poultry runs should be grassed. Laying hens consume a large amount of green herbage from the soil, and it has a mechanical effect on the digestive organs of the hen. Supplied green food is a good substitute, but it is not so good, without considering the saving of labour in the natural feeding. Hens can be successfully run (for a time) in dry pens, but don't be misled into going in for dry pens permanently.

Before these public egg tests began there was no complete system of testing hens. Often you could

hear of terrific records of hens laying, but nobody would believe them, and justly so, because, no doubt, many of the records were manufactured, as it is no light task for any private individual to keep a correct record of laying hens. This is one reason why these public tests should, and no doubt they will, go on for ever. It is worth the entry money to have the records taken even if there was no competition at all. It is absolutely necessary to have at least one full year's test, and the writer cannot at all understand how any committee, or club, or association, could have tests for any shorter time. It is absolutely waste of time in his opinion. This State has increased the egg-productive capacity of hens, and no doubt but that we stand at the top of the tree in the whole world in regard to this; and it would be nothing extraordinary to see prolific egg-strain breeds exported from Australia to England. American statisticians place the average egg-production per hen in America at sixty-seven eggs per hen, but Michael Boyer, an American poultry writer, says it is far too low, and estimates 100. I am inclined to credit the statisticians. The average per hen even in this State would be under 100, and I would venture to say we have the highest average in the world. There are thousands of people, cottagers, general farmers, and the general community, who keep fowls in the true sense of the word—which means, that the fowls do not keep *them*, nor do they even assist to keep them; and it would not be foolish legislation which would stop people from *keeping* fowls. There is no industry in the world, primary or secondary, that has to put up with the handicap of the poultry farmer in respect of the enormous competition he has to contend against from the sales of small producers who are keeping poultry at a loss. Our egg market is good, but that is not so in every State. South Australia and Queensland have very poor egg markets, and already they are looking to the English markets for an outlet. There is no doubt but that with a full co-operative system the egg market of each State could be easily raised to an all-round average of 1s. per doz. Poultry farming for eggs will pay well at that price particularly in South Australia, where they have very cheap wheat. The methods adopted in Australia for increased fecundity are trap-nesting, recording from single hens in single pens, and from constructive conformity. Constructive conformity and single pen testing will be found the most reliable and easiest to accomplish. The size of the egg has not been lost sight of, and our best layers average 25 oz. to the dozen. Maize feeding makes the richest eggs.

Winter-laying breeds and maize feeding will produce the most marketable egg, the richest in fat and protein, and containing the smallest percentage of water; the eggs have greater keeping qualities provided they are infertile. Infertile eggs will keep almost ad lib., and can be guaranteed. I noticed that Major Norton scored over the Russian commercial agent when he challenged the latter to swallow the first half-dozen eggs from an Australian and Russian consignment. The Major swallowed his half-dozen, but Shufalof, or some other "lof," declined, and the Major scored a victory for the Australian infertile.

D. S. THOMPSON.



Growing Spring Chickens.

The immediate and continuous necessity is to keep them growing—not merely existing. Anyone who undertakes this work for the first time is not long in discovering that there are difficulties, and the temptation to abandon what is often an unequal contest is very strong; but with the addition of each season's experience the obstacles are found to be more or less surmountable, and it is realised that the attainment of the goal is worth while—if the birds can be kept growing. Most of us know the unsatisfactory condition of chickens that have experienced a set-back early in their career, and that no subsequent trouble and expense is sufficient to recover the lost growth and possible profit; and the avoidance of such a deplorable state of affairs is a matter of pressing present concern. The main points are to strike an adequate balance between the extreme methods of the conservatory and the callous conditions of the blizzard, and to feed for growth. Exercise must be encouraged, and the incentive supplied as far as possible by the constant removal of the coops to fresh plots—always with an eye to the lee-side of the hedge. The hardening process must not be too long delayed, for which purpose every advantage must be taken of favourable climatic conditions. The sooner the feathering is sufficiently advanced to get the chickens away from the neighbourhood of coops and brooders and housed in stoutly made, well ventilated hutches, the better they will grow and attain a suitable maturity. The production of chickens for the spring trade is always more successfully accomplished where the attempted output is rigorously restrained within the capacity of direct and constant personal attention, and those who attempt more usually overreach themselves very badly. An early but small production should commend itself to the attention of the new small holders, who have the necessary opportunity if they can acquire the capacity.

Hutch Accommodation.

For the accommodation of feathered chickens that are being reared for market purposes no form of hutch is more generally satisfactory than that known as the Sussex Chicken Ark. Although in some particulars opposed to theoretical requirements, its value for practical purposes cannot be gainsaid; and

suitable housing has a very direct and important bearing upon the growth of the birds, especially when they have left the care of the hen and receive less attention than the succeeding and younger broods. Mismanagement as regards suitable housing is not only a danger to progress, but may easily become a direct cause of disease. It is the frequently noticed habit of inexperienced rearers either to allow the older chickens to crowd into coops—from which the hens but not the youngsters have been removed—regardless of the constantly altering relation of space to the growth of the birds; or they are housed in elaborate contrivances, which are rather ornamental than practical. On the other hand, the Sussex ark or night-hutch has stood the test of generations of practical men, whose energies have been devoted to the production of early chickens and whose opinion upon such a matter is of greater value than that of those who condemn such a hutch as being a draughty death-trap. The usual measurements of such a construction are about 5 ft. 6 in. long, 2 ft. 8 in. wide, and 2 ft. 6 in. high, with a span roof. This structure stands on legs about 18 in. above the ground, and the timber forming the base of the frame is carried out at either end, about 2 ft. beyond the body, to serve as handles for purposes of easy and constant removal to fresh ground. A large section of one side opens on hinges and serves as a door, and the floor is nothing more than a wooden grating, through which the land is directly and evenly manured and the cleaning of the interior reduced to a minimum. The only improvement our own experience suggests, as the result of long use of these hutches in preference to any other, is the provision of some protection against the possible attacks of foxes from beneath and the maiming or loss of chickens' legs as a consequence of the barred floor; and a satisfactory arrangement is the fastening of a length of wire netting to fill the spaces between the legs, the body of the hutch, and the ground. Such hutches should be stoutly made, and well tarred without and lime-washed within, the result being adequate chicken accommodation of a practical and business-like character. The birds may be removed from the coops to the hutches direct and the latter will serve for their use until a marketable size and condition is attained; and in no other type of hutch have we seen health, hardiness, and growth so well and consistently maintained at all seasons and in all weathers.

Golden Eggs.

If the goose's egg is less golden than in days of yore its value is certainly enhanced by early production, and February is the commencing month of the laying season. The goose is a curious and interesting bird, but is usually more or less (according to the species) cantankerous and suspicious. Nevertheless, it is a bird that repays study and closer acquaintance than is generally achieved. It is management that tells at this season, the management of intimate experience; and upon this the period of laying and the acceptance of a selected nesting place largely depend. Without direction a goose will often choose a most inconvenient spot in which to deposit her eggs, the neighbourhood of the pond being a favourite situation; but if the goosery is a suitable structure, and a desirable site be indicated and material provided in good time, the bird is not so foolish as to reject the suggestion. It is a good plan at about this time to make a rough nest in a roomy secluded corner, adequately dividing the space allotted from the remainder of the floor; and we have found a balk of timber, or two or three blocks of stone, more useful for the purpose than bricks or any easily moved material—the goose being a powerful bird and fidgety in nest-making. Anyway, the space must be large enough and filled with a good heap of litter, because the goose's nest is a bulky affair, and the bird not only makes a good foundation but requires a reserve of loose material wherewith to cover her eggs when leaving the nest. An ordinary nest egg should be provided, and when this is found covered with litter it is fairly safe to assume that the site has been appropriated and eggs may soon be expected. A common domestic hen will cover four goose eggs more successfully than five, unless she is of a large and well feathered variety.

THE COST OF SPOILED EGGS.

By E. H. TURRELL.

VERY few people realise how much it costs the country to send spoiled eggs to market. During the summer months the price of eggs always goes down to the lowest limit. Part of this decrease in price is due to the fact that buyers of eggs discount the price in order to make themselves safe against loss from spoiled eggs which come from the country.

In the market eggs are known as strictly fresh, fresh, check, spots, and rots. All these grades are determined from the verdict of the candler. These egg-candlers become very proficient in separating the different grades. They work in a dark room. Before each is an electric bulb, enclosed in a metal box except for a round hole in the side next to them, which allows a brilliant shaft of light to shine out into the darkness of the room. Picking up three eggs in each hand, the candler, by a peculiar rapid motion of the fingers, turns each so that the shaft of light shines through the eggs. Almost as fast as one can count, the eggs are judged and placed in convenient boxes, each grade by itself.

I have stood for hours watching this candling, and have seen case after case of eggs passing through the hands of the candler. Many the time that out of the thirty dozen in a case less than one-tenth

would be classed as strictly fresh. Occasionally a case would be brought out which was exceptionally good, and few grading below fresh would be found.

"Strictly fresh" eggs go to the best trade, and bring the highest prices. "Fresh" eggs are somewhat stale, and go to confectioners and the cheaper shops. They are sound and sweet, but somewhat stale. "Checks" are one degree worse than fresh, and are much used by confectioners, bakers, and the cheapest stores in the poorer quarters of the town. "Spots" have a dark spot on one side, and it is to be feared that some of these get into the baker's products sometimes, but most of them are used in the arts. "Rots" are the very bad ones. There are, however, uses for them. For instance, the wrapper of papers is pasted with a mixture said to be made of very bad eggs and other ingredients. This paste comes to us in a form of a yellowish powder, which has no disagreeable odour of any kind. The powder is simply mixed with water, and is the best paste I have ever found for using on newspaper wrappers. I have been told that very bad eggs are also used in making certain kinds of fine leather.

I believe if it were not for the bad eggs which reach the market the average price of eggs would be much higher in summer than it now is. Eggs may be perfectly fresh when they are collected, but they are generally put in a hot pantry or room, and kept there till they are sent to a town. The store-keeper packs them in cases, and they are put into a car in which the temperature in the summer, day and night, is above the seventies; and they go to the city, arriving at the commission merchant's place in from a week to three weeks after they were laid. The treatment they have received has started the germs in them into life, and decay has set in, reducing the price about one-half for the average of the case.

If every poultry keeper would make a practice of separating the males from the females as soon as the hatching season has passed, there would be very few bad eggs going to market during the hot months. It is the fertile eggs which spoil. An infertile egg will endure 100 degrees for weeks without starting to spoil, while a fertile egg under the same conditions would be unfit for human food within a week. Everyone who has used an incubator knows how the infertile eggs are perfectly sound at the end of three weeks under a temperature of 103 degrees, while those eggs which started to hatch and died are offensively odorous. This is because an infertile egg is simply an inert and lifeless mass of albumen, oils and various mineral salts, while a fertile egg contains a germ from which the chick is evolved. This germ will begin to develop at about ninety degrees, but will not live in that temperature. If the egg is exposed to a ninety-degree temperature for a few hours the germ starts into life. Later the temperature goes down, the germ dies, and decay begins. Once the microbes which bring about decay have invaded the shell, it is only a matter of time when the whole egg will be spoiled, and this time is not a long one.

If only infertile eggs were sent to the market there would be no spoiled ones, except in occasional instances, and buyers would pay better prices because they would not expect to find bad eggs. As it is now, the poultry breeder who really sends good eggs to market suffers loss because buyers must make prices fit the average conditions, and in doing so they try to get on the safe side by making the price low.

POULTRY ON A SUSSEX FARM.

By C. L. G. WENTWORTH.

IN spite of the great general increase in poultry-keeping all over the country, Sussex is still the most productive county in this respect, and the methods of a typical Sussex farmer who, without specialising in any direction, yet does a large business with his poultry, may prove interesting.

Just north of the South Downs lies a tract of fairly fertile country, mixed sand and clay, but possessed of a very sunny climate in winter, which is taken advantage of by many market gardeners, who go in for the raising of early vegetables for the Brighton market. The farm in question is that of Kentons, at Henfield, and the present tenant, Mr. Charles Heaver (a well-known figure with the Southdown Hunt), who has farmed there for over twenty years, gives a great deal of time and personal attention to the feathered stock on the farm. The district is too far from the principal fattening centres to tempt farmers into this class of work, as it is generally found in practice that those engaged in a special class of production tend to congregate together, though there is often no reason whatever why the work should not be carried on equally as well in other parts. But the presence in Henfield of a good local demand and the near neighbourhood of Brighton give a sufficient impetus to poultry raisers, and the production of table fowls, well fed but not artificially crammed, the supply of eggs all the year round, together with ducklings in spring and summer, geese off the stubbles, and the Christmas turkey, all afford ample scope for the most energetic.

Mr. Heaver's stock consists principally of good class table fowls, large-bodied birds, with deep breasts and white legs and skin, many of which are pure Light and Red Sussex (of which he prefers the former), Buff Orpingtons, and Dorkings, together with excellent crosses between these, and also with Indian Game cockerels. The bulk of the laying stock are housed in portable houses of capital design, although a certain number are kept in a disused cowbyre with wired-in yard in front, to which they are confined at night after feeding time, but are free to wander over the fields during the day. The breeding turkeys are put out in a small wood or "shaw," as it is termed in Sussex, where an excellent house, formed of stout poles covered with brushwood for the sides and roof, is provided for them, while the birds that are intended for Christmas are driven in the autumn to the rick-yard, where they occupy themselves with the fallen grain, and are conveniently at hand for the extra meals they then get.

The hatching and rearing of the chickens are carried out by one of the men on the farm, but the turkey chicks are the especial care of Mrs. Heaver, whose skill in this department is shown by the splendid specimens killed at Christmas, the demand for which always far outstrips the supply. During the last rearing season, a particularly bad one for young turkeys in Sussex, only a very small number was lost.

Geese are not reared on the farm, but are sometimes bought in in the autumn for feeding on the stubbles, and are sold before the winter.

Chickens are reared all the year round, to keep up a supply of table birds for private customers, and from each brood hatched a pullet or two are saved, as by this system it has been found that a regular output of eggs is secured. No incubators are used, all hatching and rearing being carried out by natural means, and the rearing ground is changed as often as possible. The turkey chicks are always raised on ground near the farmhouse, and although the same land is used each year no ill-effects have resulted, owing possibly in part to the nature of the soil, but principally to the steep fall of the ground, which greatly assists drainage. Such a plan would probably not work at all well on land in a less hilly neighbourhood, but here it has been found to be quite satisfactory, and is very convenient.

The laying stock and the young birds for killing are fed out in the fields twice daily; in the morning with soft food carried out in a sack on the donkey's back, and in the afternoon with hard corn, chiefly oats and maize. There is plenty of water in the meadows and an abundance of shade in summer, but the main reason for the large egg yield of these birds (which are not of the laying breeds proper, nor specially selected in any way for laying) and for the fact that the young stock is always in prime killing condition, without any penning or artificial feeding, is no doubt to be found in the large amount of skim



In the Farmyard.

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milk fed to the fowls. It is taken out every day to the fields after separation and poured into iron troughs, and is greedily consumed by the birds. The soft food is given hot and is very carefully prepared. In a small boiling-house a copper is kept going, into which is thrown all waste vegetables, small potatoes, etc., which are thoroughly boiled together with a few roots. The house waste is poured into a large tub

and from this and the hot vegetables the morning mash is made up, and dried off with sharps and a little Sussex ground oats. When water is needed it is taken from another tub, which receives all the water used in the dairy for washing butter and utensils, as this contains a considerable proportion of



Feeding Time.

[Copyright.]

fat which would otherwise be wasted. The same ingredients, it may be mentioned in passing, are also used for feeding the pigs, and thus the labour expended serves both classes of stock at once, though of course the proportions used differ considerably.

Several excellent ponds on the farm are used for ducks, principally "market" Aylesburys and Indian Runners—the eggs of the latter, by the way, sell at the same figure as hens' eggs, and are readily accepted by purchasers—and the cross between the two breeds is now about to be tried in order to increase the supply of winter eggs for hatching out ducklings. When it is said that eggs fetch 2s. 3d. to 2s. 6d. per dozen in winter, and are never less than 1s. per dozen, and that only for about three weeks in the spring, that ducklings of a few weeks old are 3s. 6d. each during the summer to the visitors staying in the village, and chickens 5s. 6d. per couple, it will be seen that poultry-keeping is very profitable to the farmers of the place, as there is an all-the-year-round local demand. What produce is not taken in this way or disposed of to private customers in the towns is readily sold in Brighton, to which town the market carts go three times a week, for, like many farmers in Sussex, the tenant of Kentons is a market gardener on a considerable scale, and therefore can market his surplus poultry produce at very small expense, in addition to always having an abundant supply of cheap and nutritious food in the shape of vegetables, which, on account of shape or size, are not suitable for greengrocers, although their feeding value is the same.

FEEDING STOCK IN WINTER.

By J. W. HURST.

FEEDING is not the whole art of production, but it is an important branch, and although it has been pointed out that no method of feeding will add to the number of primitive eggs within the ovary of a fowl, it is a matter of practical experience that the rate of development of such as do exist, and the commencement and duration of periods of production, are largely influenced by the feeder. There are many incidental and individual factors that prevent the general application of any system with equal chances of success; but, subject to such unavoidable modifications, the broad principles involved in feeding for given purposes hold good, and it should be one of the aims of the practical feeder to ascertain by actual experience how far and in what direction any deviation from the normal is necessary or justifiable in his particular circumstances. It often happens that winter laying and hatching results are arbitrarily local, the good record of one farm being reversed upon the adjoining holding—the feeding being to all intents and purposes similar; and in many such cases a careful investigation of the neighbouring conditions shows that the aspect, or physical formation, is sufficiently divergent to necessitate a different dietary for the two flocks, and that both cannot be fed according to textbook rules. By way of a more concrete example, it may be said that maize is one fowl's food and another fowl's poison—so do circumstances alter cases.

Speaking generally of fowls run upon farms, or otherwise allowed a considerable measure of liberty, the quality and quantity of the food supplied must be necessarily varied according to the character of the season and the abundance or scarcity of food to be found in the fields, as well as the extent of accessible area. Some farmers have the knack of producing fat instead of eggs, even in the most severe winters; whilst others achieve an excellent production by the use of what would be considered the most unorthodox mixtures for feeding at any season. In order to arrive at workable conclusions apart from modifying influences, it is essential to consider the foodstuffs commonly available, of which there is a sufficient series of grains, meals, roots, etc., for a great variety of mixtures and combinations—and variety is essential to success in feeding. Nevertheless, any considerations of this character that are limited to analytical tables and mathematical calculations are usually productive of more harm than good, and although such knowledge is helpful to those possessing practical experience, of the two extremes there is more hope for the man who "takes them as he finds them" than for the other whose knowledge is solely confined to foodstuffs in the test tube and other appliances of the laboratory. To take wheat first, it is in most cases too expensive for free feeding even if it were very desirable, which it is not to any great extent: a proportion should be included in almost any circumstances, but unless the range is large the allowance must be small, otherwise the fowls will acquire more fat than is consistent with a productive condition. Barley, although useful for some purposes and used extensively in the form of

meal for fattening, is not generally suitable for feeding stock birds—our present subject; it is often recommended as a food for pullets before laying, but other foods are preferable. Maize is theoretically objected to, but in some circumstances of its use it is a good and economical winter food for laying stock, and must not be hastily or sweepingly condemned. The farmer's use of maize has been almost universally pointed to as the source of all his poultry troubles, but there are very many who realise its profitable uses as well as its limitations. Of all cereals, perhaps, oats constitute the best and safest staple food for feeding stock birds, particularly in the winter months when they are less likely to fatten readily—although the fattening properties of oats seldom affect the laying condition of fowls running at liberty. The reputed objection of fowls to oats is more often due to the feeding of inferior grain than any other cause, and a disinclination to consume an undue proportion of husk is quite understandable; moreover, in adopting the method of feeding one description of grain at a time, any possible fad of this sort is quickly overcome by hunger.

Of the various meals, that most generally useful (and commonly obtainable) for the feeding of stock is middlings or sharps—also known by a variety of local names. This meal varies perhaps as much in quality as it does in name, but fine sharps, when available in a pure state, forms an important ingredient of warm food mixtures, both on account of its intrinsic feeding value and the bulk it adds to the other ingredients. For the winter feeding of stock birds fine sharps will serve the purpose as far as meal is concerned, although if bran is available it is sometimes beneficial if scalded. Ground oats of fine quality, although primarily a fattening food, is sometimes fed in limited proportions to the stock; but it is necessary to remember that it is an expensive food for the purpose—and biscuit meal need not be considered in the present connection, for the same and other reasons. In connection with soft food mixtures it is necessary to refer to meat or meat substitutes, a factor of considerable importance in the winter feeding of stock—particularly present laying stock. When fresh meat of any description is available it should be boiled before use, but if it is not readily obtainable a meat meal is perhaps the next best to use, and after that freshly cut green bone; but in no form is it generally desirable to feed meat more frequently than on alternate days, and in many cases every third day will suffice. Relative to the use of peas, beans, and their resultant meals, as substitutes for animal or meat foods, the remarks relative to careful and occasional use apply even more forcibly; and in every situation where fresh meat is obtainable in any suitable form, it is to be preferred to any of the usual substitutes.

With regard to green food, the practical feeder of other stock realises well enough that the feeding value of grass is at its lowest in winter, and he remedies the deficiency accordingly, but too often neglects this item in the arrangement of the fowl's dietary, although the farmer need never be at a loss in this respect. Roots may be boiled and fed with the soft food mixture, cabbage greens are available, and finely cut and scalded clover hay is not much trouble to prepare; swedes may be split and fed raw, but not to excess. Grit and shell are generally necessary, and it is usually a mistake to suppose that

a sufficiency of grinding and shell-forming material may be found on a free range; in most cases it is profitable to supplement the available supply. So much for the commonly necessary foodstuffs, and although there are others of more or less value for the purpose, those mentioned are usually easily obtainable and comprise the most generally useful for the farmer or other relatively large stock-feeder; including, as they do, not only suitable foods for laying hens, but also for the feeding of stock turkeys and geese—descriptions that are too often somewhat neglected during the winter months. This tendency to neglect stock birds that are not in immediate profit is a common fault, particularly in connection with the birds mentioned, and during the present season; whereas if they are to come into profit in due season their present condition, and its maintenance by adequate feeding, is a pressing necessity.

In the winter feeding of stock, with a farm or other suitable range, the feeding of a soft food mixture in the morning, with grain food at night, should be sufficient in most circumstances, with such modifications as may be dictated by the necessities of the moment, such as the temporary requirements of the exceptional use of shelters or scratching sheds in spells of severe weather. Whenever possible, it is preferable to feed the fowls on the grass and keep them running, only confining them when absolutely necessary, feeding the sharps, meat, and cooked vegetables early, and oats, wheat and maize on successive evenings—taking care not to over-feed. As regards quantities and proportions, no very useful purpose would be served in drawing up a table of rations, the present object being to suggest generally suitable foods and to leave some scope for the exercise of common sense in relation to the requirements and circumstances of the individual.

LIME FOR LAYING HENS.

Translated from "L'Aviculteur."

EVERY year, at about this time, the question is mooted as to what is the best food to give hens to induce them to continue laying. In our opinion the four best grains to feed, either whole or in the shape of meal, are oats, barley, maize, and buckwheat. We give here the chief chemical constituents of these grains:—

OATS.		MAIZE.	
Albumen	13·8	Albumen	12·3
Starch	46·1	Starch	71·
Sugar	6·	Sugar	0·4
Fat	6·	Oil	9·
Water	2·	Water	4·5
BARLEY.		BUCKWHEAT.	
Albumen	4·5	Albumen	11·
Sugar	6·	Starch	52·
Starch	59·5	Fat	2·
Water	11·		

Feeding with the above grains will materially influence the laying as well as the table qualities of the fowls.

The best results will be obtained by using grains which contain the largest amount of separable albumen and, at the same time, retain the nutritive properties in convenient proportion.

We recommend, for the purpose of supplying the necessary quantity of lime for the formation of the shell and to induce laying, the employment of *lime corn*, prepared in the following manner, which is exactly the same as the preparation of corn used for sowing. Without being particularly partial to it, fowls eat it quite well, and there are no injurious effects if it is not given for too long at a time. Wheat is generally the grain chosen for the treatment. The moderate price of wheat allows of its use in the poultry-yard without fear of extravagance. All grains can, however, be treated with the lime; barley, oats, and maize being perhaps some of the best.

Take a quart of quicklime and mix it with ten to a dozen quarts of hot water. Pile the corn in a conical-shaped heap and pour the mixture of lime and water on the top of the heap. Stir it about and mix well with a stick. Then take a wooden spade and work

the heap well about till every grain has received its coating of the lime mixture. Now spread out the heap and let the corn dry thoroughly before binning it.

Feed this corn to the birds according to their daily requirements of hard food. This way of preparation has the great advantage of destroying any parasites in the corn, which might have an injurious effect on the health of the birds. It is open to question whether many of the diseases to which fowls are liable, including the dreaded fowl cholera, do not owe their origin to poisoning by bad grains or to the existence of unknown parasites hidden under the shell or in the interior of the grains.

In cases where fowls die in numbers without apparent cause, we advise the giving of this limed corn for some time, as its use may restore health to the poultry-yard. In any case we cannot too highly recommend it for inducing egg production.



The reaction in demand which generally sets in immediately after the Christmas week has passed away and the markets are resuming their normal activity. The end of the English game season being at hand, the demand for poultry will increase; in fact, this has already taken place, for prices are now well on the upward grade. Although with the first of the month there commences the close season for English game, the purveyors of game are allowed an extension of ten days in which to clear their stock, at the expiration of which extension the demand for poultry will receive a great stimulus. As soon as pheasants and partridges are over, the season for Guinea Fowls commences and continues till well into April. During this period there is a very considerable demand for these birds, though, unfortunately, their value has been somewhat adversely affected by the importation of Italian birds, these being imported at cheap rates, but for birds which are known to be of British origin there is still a good demand. It is during the month of March that Guinea Fowls realise their highest values, fetching from 3s. to 3s. 6d. each.

These birds should be marketed in their feathers; plucking, or partial plucking, as is customary when they are exhibited in table poultry classes, has an adverse effect on their value when they are sent to the markets, and would reduce it by some 40 to 50 per cent. They should be killed by dislocating the neck, and allowed to get thoroughly cold before being packed. Care should also be taken to keep the

plumage in good condition, as this adds materially to their appearance. Being shy birds, they are sometimes difficult to catch, and occasionally on account of this difficulty their owners resort to shooting them when wanted for market. This, needless to say, is a great mistake, for it greatly reduces their marketable value.

The Egg Trade.

The supply of both foreign and English eggs has fluctuated considerably during the month. English eggs were more plentiful at the beginning of the month than during the middle and latter part, the ill-effects of the snow and cold weather not being felt till some ten days after it had gone. The shortage in the supplies of the cheaper foreign eggs has caused the prices for this class of goods to rise to an extent which has probably not been known before; yet, curious as it may seem, the values of the better class of foreign supplies were not correspondingly increased; in fact, they were rather inclined to be low in comparison with the corresponding period of other years.

Imports of Foreign Eggs.

The Secretary of the National Poultry Organisation Society in his summary of the foreign imports of eggs calls attention to the fact that there is again a decrease of quantities of eggs imported in 1908, compared with 1907; but an increase in values, as in

1907, compared with 1906. The figures recorded for the last three years are:

	1906.		1907.		1908.
Eggs.....	£7,098,122	...	£7,135,530	...	£7,183,112
Poultry ...	869,114	...	903,847	...	934,679
Totals...	£7,967,236	...	£8,039,377	...	£8,117,791

The number of eggs imported during 1908 was 2,185,208,400, which was a decrease of 42,939,720 from 1907, but the increase in value over those of the previous year was £47,582.

The declared average values of imported eggs show a steady advance, as seen by the following figures:

	per gt. hd.		per gt. hd.
1898 ...	5s. 10d.	1906 ...	7s. 6½d.
1900 ...	6s. 5½d.	1907 ...	7s. 8½d.
1904 ...	6s. 9d.	1908 ...	7s. 10½d.

As he points out, part of this advance in values is due to enhanced demand, but by no means a small share to organisation of, and improved methods of, marketing.

The increase in the value of the annual imports of poultry since 1906 amounts to £65,565. Russia has nearly doubled the value of her poultry trade with this country since 1906, whilst the American imports show a large decline owing to the increasing demand for poultry in the States.

THE EUROPEAN EGG TRADE.

TO collect particulars of the egg trade of Europe is indeed a large undertaking, but to edit such a collection and make it readable is a still greater task. Yet, this has been successfully accomplished by Prof. Dr. Rudolf Sonndorfer, the Director of the Vienna Academy of Commerce, in a book which has just been published ("Der Internationale Eierhandel." Alfred Hölder, Vienna). It is impossible here to refer at all fully to the mass of interesting detail given, but a few figures relative to the trade between the Continent and England may be quoted. England is the greatest consuming country of Europe, though Germany imports a larger number of European eggs; but against this must be reckoned the importation of Irish eggs into Britain and the enormous home production. Russia supplies us with the largest quantity of eggs. She sent us direct in 1906 864,000,000 eggs, and an equal number at least must be allowed for the indirect trade between Russia and England. The total export of eggs from Russia in 1906 was 2,833,000,000, of which we must have obtained over 1,700,000,000. The greatest difficulty in the way of obtaining exact figures is the fact that so many eggs are imported by Western European countries only to be exported; therefore it has been found necessary to arrive at the next exportation by subtracting the imports from the exports. To give two examples: The Danish returns show an importation of 76,600,000 eggs in 1907 and an exportation of 404,400,000, leaving a net export of 327,800,000 eggs. And again, the Austro-Hungarian imports for the same year total 1,175,352,000 eggs, the exports 2,629,078,000, with an export balance of 1,453,726,000, a total which places her second as an exporting country. It is interesting to note that Belgium must be reckoned as a consuming country and not a producing country, for in 1907 613,160,000 eggs were imported, of which 224,900,000 were consumed in the country and

388,260,000 were exported, and the exportation of Belgian eggs only amounted to 128,800,000, giving a total of 517,060,000. Of the 388,260,000 imported eggs which were exported 273,360,000 were sent to England, and of the 128,800,000 Belgian eggs only 14,500,000 reached our country. It is not difficult to tell the nature of the "foreign" eggs Belgium exported, as the 613,160,000 imported eggs is made up as follows: Italy 219,700,000, Russia 179,300,000, Austria-Hungary 118,800,000, Hamburg (origin, we should think, uncertain) 43,100,000, Bulgaria 28,100,000, The Netherlands 17,640,000. The latest figures dealing with England are for 1906, and they show an importation of 2,265,000,000 eggs, valued at £7,098,125, or an average selling price of 7s. 6d. per 120. The total Irish for the same year was 770,092,200 eggs.

CHANGES TAKING PLACE IN CHICKENS IN COLD STORAGE.

By MARY E. PENNINGTON,

Bacteriological Chemist, Bureau of Chemistry.

We give below an abridged reprint of this article from the Yearbook of Department of Agriculture for 1907, Washington, U.S.A.

WHILE the preservation of food by cold has been in practical use for many hundred years, it has remained for the nineteenth and twentieth centuries to extend this industry to all parts of the civilised world and so successfully to commercialise the process of producing cold artificially that it is not only financially a success but is now indispensable to the food producer. Cold storage is entirely changing the character of the diet of certain tropical or semi-tropical peoples and, judging from the results of the introduction of ice into the Philippines, to their betterment. To our outlying possessions we are sending refrigerated articles, but the colonies of other nations are supplying the mother country with immense quantities of produce and are developing resources which, without artificial refrigeration, would lie dormant.

Especially interesting in this relation is the report on cold-storage poultry sent by New Zealand to England. In 1905 this colony shipped 15,176 birds—almost exclusively chickens and ducklings. They were frozen at 18° to 22° F. and transported in cold rooms, the temperature of which was generally somewhat below 15° F.

To insure the character of the birds exported in a frozen condition the New Zealand Department of Agriculture has arranged to receive them alive at the four principal ports of that island, kill, pluck, pack, freeze, and store them for a charge of 4d. each, a sum which is lower than the producer would have to pay working independently. The department also inspects each bird and reserves the right to reject any which are unsuitable, it having formulated a series of requirements regarding age, weight, etc., to which all the producers are required to conform.

This method removes one great difficulty and source of danger in the refrigeration of food products, namely, improper and unclean methods of killing and preparing for storage, and, what is even more important, it guarantees such prompt deposit of the

TABLE OF PRICES REALISED FOR HOME, COLONIAL, AND FOREIGN POULTRY, GAME, AND EGGS DURING JANUARY.

ENGLISH POULTRY—LONDON MARKETS.

DESCRIPTION	1st Week.	2nd Week.	3rd Week.	4th Week.
	Each.	Each.	Each.	Each.
Surrey Chickens.....	2/9 to 5/0	2/9 to 5/0	2/9 to 5/0	2/9 to 5/0
Sussex "	2/9 " 5/0	2/9 " 5/0	2/9 " 5/0	2/9 " 5/0
Yorkshire "	2/6 " 4/6	2/3 " 4/6	2/3 " 4/6	2/3 " 4/6
Boston "	2/3 " 4/6	2/3 " 4/6	2/3 " 4/6	2/3 " 4/6
Essex "	2/3 " 4/6	2/3 " 4/6	2/3 " 4/6	2/3 " 4/6
Capons.....	2/3 " 3/3	2/6 " 3/6	2/3 " 3/3	2/3 " 3/3
Irish Chickens	2/0 " 3/0	2/0 " 2/4	2/0 " 2/6	2/0 " 2/6
Live Hens	3/0 " 4/6	3/0 " 4/0	3/0 " 4/0	2/9 " 4/0
Aylesbury Ducklings	5/0 " 8/6	5/0 " 8/6	5/0 " 8/6	5/0 " 8/6
Ducks	0/10 " 1/0	0/10 " 1/0	0/10 " 1/0	0/8 " 0/10
Geese	—	—	—	—
Turkeys, Eng., per lb.	—	—	—	—
" Irish	—	—	—	—

ENGLISH GAME—LONDON MARKETS.

DESCRIPTION.	Each.	Each.	Each.	Each.
	Each.	Each.	Each.	Each.
Grouse	2/0 to 2/6	2/3 to 2/6	1/9 to 2/3	1/9 to 2/3
Partridges	2/0 " 2/6	2/0 " 2/6	1/9 " 2/3	1/9 " 2/3
Pheasants	2/0 " 2/6	2/0 " 2/6	1/9 " 2/3	1/9 " 2/3
Black Game.....	2/0 " 3/0	2/0 " 3/0	2/0 " 3/0	2/0 " 3/0
Hares	0/10 " 2/0	0/10 " 1/9	0/10 " 1/9	0/10 " 2/0
Rabbits, Tame	0/9 " 1/1	0/9 " 1/1	0/9 " 1/1	0/9 " 1/0
" Wild	—	—	—	—
Pigeons, Tame	2/0 " 2/6	2/3 " 2/6	2/0 " 2/3	1/9 " 2/3
" Wild	—	—	—	—
Wild Duck	0/6 " 1/3	0/6 " 1/3	0/6 " 1/3	0/6 " 1/3
Woodcock	0/5 " 0/7	0/5 " 0/7	0/6 " 0/7	0/5 " 0/6
Snipe	—	—	—	—
Plover	—	—	—	—

ENGLISH EGGS.

MARKETS.	Per 120.	Per 120.	Per 120.	Per 120.
	Per 120.	Per 120.	Per 120.	Per 120.
LONDON	17/6 to 16/0	16/8 to 15/6	16/0 to 15/0	15/6 to 14/6
Provinces.	Eggs per 1/-	Eggs per 1/-	Eggs per 1/-	Eggs per 1/-
MANCHESTER ...	6 to 8	6 to 8	6 to 8	6 to 8
BRISTOL	1/8 per doz	1/7 per doz	1/6 per doz	1/4

FOREIGN POULTRY—LONDON MARKETS.

COUNTRIES OF ORIGIN.	PRICES REALISED DURING THE MONTH.			
	Chickens. Each.	Ducks. Each.	Ducklings. Each.	Geese. per lb.
Russia.....	1/3 0/9 1/6	—	—	0/6
Belgium	—	—	—	—
France	—	—	—	—
U S. of America	0/10 to 0/11	—	—	0/10 to 1/0
Austria	1/6 " 1/9	—	—	0/7 1/2 to 0/9
Canada	—	—	—	—
Australia	—	—	—	—

FOREIGN GAME. LONDON MARKETS.

COUNTRIES OF ORIGIN.	IMPORTS OF POULTRY AND GAME. MONTH ENDING DEC. 31, '08.	
	Price Each During Month.	Declared Values.
Capercailzie	1/9 to 1/9	Poultry.
Black Game.....	1/0 " 1/2	£124438
Partridge.....	1/3 " 2/0	£3,165
Quail	—	113475
Bordeaux Pigeons	1/0 " 1/6	119431
Hares	2/0 " 2/6	6306
Rabbits	0/8 1/2 " 0/9	9968
Snipe.....	0/6 " 1/0	£9,332
Totals	—	£373618

IRISH EGGS.

DESCRIPTION.	1st Week.	2nd Week.	3rd Week.	4th Week.
	Per 120.	Per 120.	Per 120.	Per 120.
Irish Eggs	13/6 to 16/0	13/6 to 15/6	12/9 to 13/6	12/9 to 13/6

FOREIGN EGGS.

DESCRIPTION.	1st Week.	2nd Week.	3rd Week.	4th Week.
	Per 120.	Per 120.	Per 120.	Per 120.
French ...	17/6 to 17/0	16/6 to 16/0	16/0 to 14/0	14/0 to 13/6
Danish ...	16/6 " 16/0	16/0 " 15/0	15/0 " 13/0	14/0 " 13/0
Italian ...	15/0 " 14/6	14/0 " 13/0	14/0 " 13/6	13/6 " 12/0
Austrian...	9/0 " 11/6	11/0 " 11/9	11/0 " 11/9	11/0 " 10/0
Russian ...	9/0 " 10/9	9/0 " 10/9	9/6 " 10/6	9/0 " 10/0
Australian..	10/0 " 10/6	10/0 " 10/6	—	—
Canadian..	—	—	—	—

IMPORTS OF EGGS.

MONTH ENDING DEC. 31, '08.		Declared Values.
COUNTRIES OF ORIGIN.	Quantities in Gt. Hund.	
Russia	515,340	238,921
Denmark	365,818	222,982
Germany	220,276	92,779
Belgium	150,126	76,915
France	49,819	25,428
Canada	14,369	7,240
Australia	—	—
Other Countries..	241,812	98,986
Totals	1,557,560	£748,251



Plate X.

birds in the refrigerating rooms that any decomposition previous to storage is prevented.

Although it is impossible to obtain exact statistics on the subject, it is estimated that approximately from 75 to 90 per cent. of all the poultry produced in the United States is, for a longer or shorter period, preserved in cold storage. While the number of ducks, turkeys, and geese is by no means small, chickens, of course, are greatly in the majority, and from the appearance of the cold-storage warehouses in our large cities it would seem to be almost a matter of routine that every chicken intended for market should sojourn there for a certain, or rather an uncertain, time.

The storage of eggs for preservation by cold is almost exclusively confined to the early spring and summer, since at this time they are most plentiful. The placing of chickens in cold storage, on the contrary, may occur at almost any season, the large poultry raiser killing the birds of the age desired and shipping them to the warehouse, to be sold when the market is most lucrative. At certain seasons, however, practically clean sweeps will be made in the country adjoining large cities of all the birds suitable for market, so that for weeks afterward it is impossible to purchase fresh chickens. This is most apt to occur in the case of stewing and roasting chickens in early summer, when the broilers are well advanced and it is desirable to weed out all unprofitable laying hens and superfluous cocks. Hence, in the early summer the purchaser of any except broiling fowls is very likely to get those which have been in storage.

OPINIONS AS TO TIME COLD STORAGE MAY BE CONTINUED.

Undoubtedly it is of great advantage to the producer, and of greater importance to the consumer, that poultry or meat of any type should be chilled as promptly as possible after killing, and long experience seems to indicate that the flavour of meats is improved if they are kept at from 2° to 5° C. (35.6° to 41° F.) for a few days. However, because of the modern demand for produce out of its natural season, as well as the efforts of the producer and dealer to derive the greatest profit possible by selling when the market is shortest, we have developed a system of refrigeration under which foodstuffs are kept for months and years and then offered for sale without any label to distinguish them from fresh materials.

While opinions indicate that the trade, at least, is fairly unanimous in believing that poultry may be kept for long periods without change, there is considerable latitude as to the actual length of time that cold storage is advisable. While one dealer conservatively fixes one year as certainly safe, another believes that there is no limit to the period that poultry may be kept, provided the temperature be "right."

COLD-STORAGE TEMPERATURES.

Here again a mooted question arises, and in the absence of investigations conducted with scientific accuracy we must rely upon the observations of the practical cold-storage warehouse men. It is generally conceded that the freezing of the fowl should be as prompt as possible, therefore some warehouses place the chickens for a few hours at -10° F. (-23.33° C.), transferring them, when frozen, to a temperature of about 15° F. (-9.44° C.) for permanent storage. Others use the latter temperature exclusively, while there are those who prefer 18° to 22° F. (-7.78° to

—5.55° C.). The New Zealand Department of Agriculture supports the latter view, and their report states that such delicate tissues and small bodies as are found in the case of chickens lose their bloom and contract when kept at 15° F. or below. However, it must not be forgotten that the birds so stored are far more carefully handled and selected than are the promiscuous lots shipped to our storage warehouses. De Loverdo* advocates —5° F. (—20.6° C.) for freezing and 15° F. (—9.44° C.) for maintenance, though he states that in consequence of such rigorous temperatures the tissues contract and lose their elasticity.

METHODS OF THAWING.

Another factor in the final condition of the saleable cold-storage fowl is the method of thawing. If the bird directly from the freezer be exposed to air at the usual temperature there is likely to be a condensation of moisture on the outer surface and a consequent degeneration of the tissue and often a growth of molds. Hence, it is necessary to thaw in a current of dry, cool air if this method be adopted. The most common practice is simply to place the birds in a vessel of water at room temperature. An appreciable amount of water is absorbed by the dried meat, thereby adding to the price received, since it is sold by weight, and, to the householder at least,

the chicken is sold in a thawed condition. According to the warehouse men the best results are obtained when the frozen birds are packed in small pieces of ice and more than twenty-four hours allowed for thawing.

APPEARANCE OF CHICKENS STORED FOR VARYING PERIODS.

While conducting certain investigations concerning the changes taking place in foodstuffs when preserved

* Le Froid Artificiel, Paris, 1903.

by cold, it has been necessary to examine a number of chickens stored for periods varying from a few days to several years. Contrary to the statements generally made by the trade, there have been noted marked differences between fresh and cold-storage chickens, which differences are apparently progressively dependent upon the time of storage. Even after very short periods of storage in a solidly frozen condition, microscopic examination reveals changes in the muscle fibres. Alterations in the colour and texture of the chicken are apparent to the ordinary observer after a few months at low temperatures, and it is with such changes, visible to any housewife, that this paper deals.

FRESHLY KILLED FOWLS.

Plate X. shows a young Barred Plymouth Rock cockerel, 12 weeks old and weight 700 grams. It had been raised on cracked corn, oatmeal, sweet milk, water-cress and grass, was starved for 24 hours, and then killed by puncturing the spinal cord from the mouth. The sketch was made about seven hours after death.

Since the purchaser of chickens for food purposes must ordinarily judge of the quality by the exterior alone, it may be well to note certain salient points plainly visible in the case of the fresh chicken which

are markedly altered when it has been cold stored for a long period. Probably the most pronounced of these differences is the absence in the fresh fowl of any tinge or suggestion of green in the colour of the skin, which is a very pale, soft yellow, with enough translucency to show through it the delicate pink of the muscles underneath. It can be plainly seen, too, that the pink tint is not of the skin itself. While the skin is perfectly flexible and is not adherent over any



Plate XIII.

part of the body, it is well filled by the tissues below, so that areas distended by other fluids or gases are wanting. The feather papillæ are perfectly distinct and, though of the same tint as the skin, are plainly visible because of their elevation. In those regions where the papillæ are most numerous, or support heavier feathers, they lend a much brighter yellow hue to the skin. The neck is smooth and well rounded, the comb and gills red, and the eye full. The colour of the fat of a fresh chicken is also characteristic. It is normally a light canary yellow, exceedingly transparent, and with no hint of green.

CHICKENS IN STORAGE TEN MONTHS.

Plate XIII. shows the musculature of a chicken which has been in cold storage under the conditions described for ten months. While the exterior of this chicken was somewhat dried, the skin less translucent than that of the fresh, and the feather papillæ not quite perfect, it was still a good, palatable-looking bird.

The muscles show a greater difference, particularly on the inner part of the thighs, where the general tendency to deepen in tint and to develop a leaning toward brownish or purplish tones was most marked. The muscles were soft and tore easily, though the intermuscular fascia was in good condition and permitted of concise dissection. There was, however, a marked drying out of the tissue, and within two hours after the removal of the skin this condition had progressed farther than was observed on the fresh chicken after twelve hours. It was far more noticeable in the outer than in the deep muscle, the pectoralis minor withstanding the action of the air very well.

The fat is distinctly a deeper yellow and is becoming opaque.

The viscera were in fairly good condition, though the brilliancy of colouring so noticeable in the fresh fowl has been decidedly dulled and the walls of the intestine have been reduced almost to films. There was no evidence of putrefaction, but there was a slight odour not like that of fresh flesh.

CHICKENS IN STORAGE THREE YEARS.

EXTERIOR VIEW.—Plate XV. shows the exterior of a chicken which had been in cold storage for three years. After thawing, which in this case required from eight to ten hours, though the bird weighed only about 500 grams, the tissues were still so stiff that the position of the bird in the cold-storage box was retained almost exactly. Unlike the chickens previously described it was stiff enough to hold the posture, even when hung—as in the drawing—for observation, and it kept that position through the whole of the study.

When the drawing of the outer part of the chicken had been finished careful massage loosened the muscles and joints so that it could be stretched without enlarging the original rents in the skin shown in the sketch; by no amount of manipulation, however, could the two sides be made symmetrical.

The most striking difference between this chicken stored for three years and those stored for shorter periods or those which are fresh is this pronounced inflexibility and the general green tint of the skin. The whole appearance of the bird was unpleasant in the extreme. The odour was not that of putrefaction, but was of a sharp, penetrating, unpleasant character

having a biting property, which suggested the effect of acrolein on the eyes and nostrils. While this was plainly detected in the unopened bird, the muscles and the viscera gave it far more distinctly, and a decided increase in its intensity was noticed while the study was progressing.

The texture of the skin was such that its original character would never have been surmised. Every particle of elasticity had vanished and its appearance was that of a dirty, green, wrinkled parchment. The feather papillæ are seen only as rather darker areas.



Plate XV.

Where the skin was stretched over the bones it was exceedingly thin, and with very little pressure would crack. This fact is illustrated by the bare breast and the projecting appearance of the leg bones, the skin having split on the breast and being ready to split over the folded joints. The eyeball was much sunken, while the comb and gills had practically disappeared.

MUSCLES AND INTERNAL ORGANS.

In the case of chickens which had been in storage three years, the changes in texture and colour of both muscles and fat were especially striking. There was a very marked drying out, particularly of the muscles of the upper breast, so that the larger portion of them had become as parchment-like in character as was the skin, and might easily have been mistaken for the skin itself. Below this yellow-tinged dried area the breast muscles present almost a rust red. The gradual paling of the thin muscle as noticed in the fresh chicken was entirely wanting. On the inner part of the thigh the soft salmon pink of the fresh

muscle was replaced by colours varying from a deep brown to bluish red, and there was no trace of the original colour to be distinguished. Between these muscles the bands of shrunken fat were of a deep brown orange colour. No feature of the entire chicken was more striking by comparison with the fresh fowl than this change in the colour of the fat.

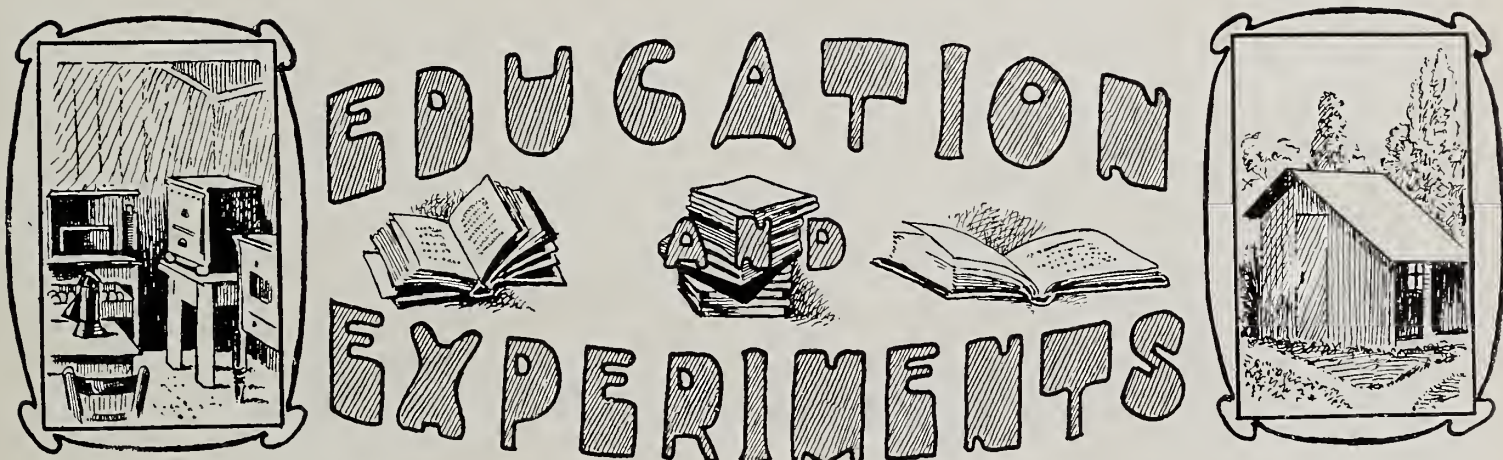
CONCLUSION.

The changes in the chickens which have been described are not the most pronounced of their kind, other specimens exhibiting more marked degenerations and some showing better conditions. These were, rather, alterations representing as nearly as possible the mean.

Such being the case, the dictum of the warehouse men that there is no change in cold-storage poultry and that it may be kept for an indefinite period

can not be accepted in its entirety. Both microscopic study and the taste of the cooked fowl confirm the fact that the microscopically visible degeneration does take place.

Considering the enormous growth and the wide extent of the refrigeration of foodstuffs, as well as the absolute lack of authoritative supervision of such frozen products before they are offered for sale, it seems most desirable that a careful study should be made to determine whether such alterations as have been noted affect the appearance and histological integrity of the flesh only or whether, as has been asserted by some, the consumption of poultry after long periods of cold storage is not responsible for some of the obscure intestinal disorders and the imperfect metabolism from which modern humanity, especially the dwellers in large cities, are so apt to suffer.



Manitoba and the Poultry Industry.

Although the Manitoba Agricultural College has a well-equipped poultry section, for the past two years, in fact, since its inception, practically nothing has been done to encourage the industry in the province; but we understand this is to be changed for the future. The local poultry association has pressed very hard for organised effort on the part of the College, with the result that a series of lectures have been inaugurated, and will be carried on during the winter. Dr. A. W. Bell has been dealing with the subject with the second year agricultural men during the fall of the year, and in the demonstration work he has been assisted by Mr. Geo. Wood. The questions relative to the breeding, feeding and general management of ducks, geese and turkeys have been dealt with by Mr. Chas. Midwinter, of goose fame. This forward movement should mean much to the industry in Manitoba.

Short Courses at Ames, Iowa.

A new departure has recently been made at the Iowa State College, in that during the New Year vacation a special short course of poultry-keeping has been given. This course, extending over a period of ten days, has been arranged with the view of enabling those who are unable to spend a longer

time, to gain a certain amount of knowledge on the subject of up-to-date poultry management. It is impossible in such a short course for the students to have much practical work, but the lectures given dealt with almost every part of the industry. The poultry department is well equipped, and although short these courses, if continued, should prove very valuable to those attending.

A Farmers' Week at the Poultry Institute, Manhattan, Kansas.

Farmers, particularly in this country, are not altogether kindly disposed towards the keeping of poultry and, with the object of overcoming their disbelief in the value of the hen as a money maker, the poultry instructor at the Agricultural College in Manhattan, Kansas, has been discussing the subject with them. The meetings were held from December 28 to January 2, and under the direction of Mr. J. W. Miller, the superintendent of the Farmers' Institute, various phases of the business have been dealt with. One of the most interesting talks was on the subject of fattening, while those on fresh-air housing, natural incubation, and rearing and feeding all classes of poultry excited considerable interest. To encourage farmers to keep poultry is not an easy thing, but surely it is one of the most important lines for future development.

EMPIRICAL INCUBATION.

To the Editor of THE ILLUSTRATED POULTRY RECORD.

SIR,—In replying to the remarks upon the Diathermal Incubator in your December number, I shall confine myself as exclusively as possible to an explanation of those laws and principles which are at once its *raison d'être* and the distinguishing differences between it and the Tank Incubator.

To anyone ignorant of the rudiments of physics the enunciation of its laws, especially when they happen to clash with our interests or beliefs, is apt to prove somewhat disturbing. Such, however, is inevitably the result of all discovery or innovation. At the same time, I may be allowed to remind the writer of your notice that sneers at the work of others, and at laws and facts which he is unable to understand, is not criticism, nor is it in the best of taste; while to denominate artificial incubation through the medium of anything but a hot water tank as "empirical" is to betray an amount of prejudice as surprising as it is colossal.

It is certainly very instructive to hear that at Theale Poultry Farm the incubators "frequently" hatched out with the variation of only half a degree in temperature. This would be, scientifically speaking, an utter and absolute impossibility, unless both the barometer and thermometer (outside) were perfectly steady and unchanged during "frequent" periods of three weeks at a time. Theale Poultry Farm may be warmly congratulated. Joshua stayed the course of the sun, but Theale Poultry Farm "Rides on the whirlwind and directs the storm." As Dominie Sampson would remark, "Prodigious!" But as this will be all Greek to Mr. Will Brown I had better explain.

On December 10, 1908, when I received your journal, there occurred one of those frequent and rapid changes so common to our climate. The barometer fell nine-tenths of an inch, and as a rise or fall of one inch is equivalent to a difference of half a pound in atmospheric pressure, it follows that on that day a weight of 7.2 oz. was taken off every regulator capsule in the United Kingdom.

On the afternoon and evening of the 18th of the same month the barometer rose seven-tenths of an inch, in doing which it indicated a weight of over $5\frac{1}{2}$ oz. put on them.

The effect the subtraction or addition of these weights would have upon a regulator, so sensitive, we are told, as to be influenced by the equivalent of half a degree of pressure, Mr. Will Brown informs us, with a sublime indifference to facts, would be nil. A more correct answer, however, will be found on page 172 of your same number, where we are informed that "a strange and unaccountable epidemic" destroyed thousands of embryos on the nineteenth day.

Whether it would have paid the owner of Broadwater Duck Farm to have taken up his abode with his incubators, and by regulating his regulators prevented such a holocaust, scarcely admits of doubt.

So much for the adverse influences of barometrical pressure upon the Tank Incubator. The lesson taught is that no regulator can be effective that is subject to such influences.

We may now proceed to examine my next statement, which Mr. Will Brown, with much acumen, informs us he "passes over in silence and sorrow," viz., that the regulator of his beloved Tank Incubator is useless and powerless during at least half the time of hatching.

If a closed vessel of water be placed on the fire with the object of raising its temperature to a certain point, say, 150 deg. F. and no higher, and is withdrawn when that point is reached, the hand that withdraws it may be said to act as a regulator, for without its action the water would have attained a higher temperature than was desired. This is very simple, but if, now, it is necessary or desirable to reduce the temperature by 10 deg, how is it to be done? Cold water cannot be poured into the vessel, and the regulator—the hand—is useless, for although it can raise the temperature higher by replacing it upon the fire, it cannot possibly reduce it. What is to be done? There is only one thing, and that is to wait patiently until the superfluous heat has slowly radiated away into the surrounding atmosphere. And the warmer the room the slower the radiation (cooling). Now this is what is continually taking place in the Tank Incubator. The regulator can and does prevent the accession of heat to the tank by shutting off the lamp flame, but all the regulators in the world cannot cool it or accelerate its cooling by the fraction of a degree.

The cold night and morning air penetrating the incubator keeps open the valve until the tank has acquired a temperature sufficiently high to overcome the increasing coldness within the egg drawer. Now comes a rapid change, the sun comes out and warmth increases possibly to the extent of 10 deg. within the next three or four hours. To meet this change it surely stands to reason that if the tank does not part with a proportionate amount of its heat the temperature of the egg drawer will, and must, rise to a dangerous extent. For even the youthful temerity of Mr. Will Brown will scarcely affirm that the heat of the tank should remain the same, for if he does, what is the use of a regulator at all? Let us now see what the regulator is doing at this most critical juncture.

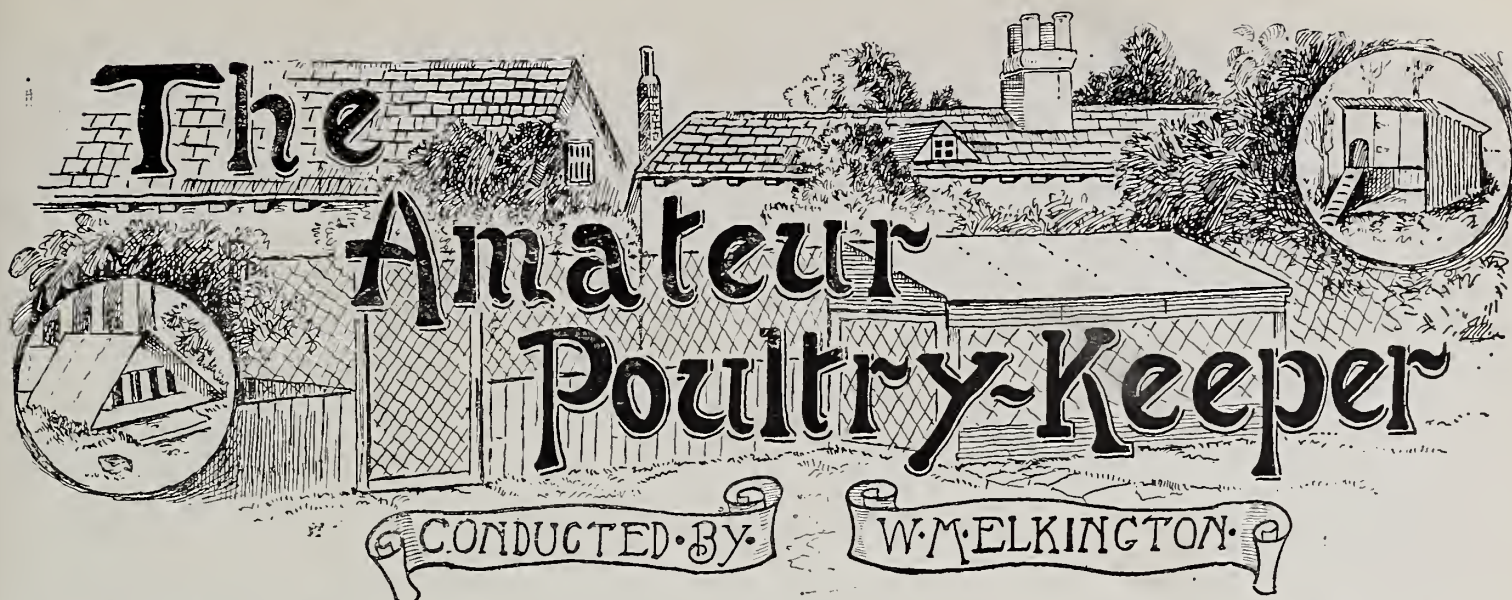
It has already fulfilled part of its function by increasing the heat of the tank so as to counteract the cold of night; it must now complete the remainder of its duty by reducing it so as to counteract the increasing warmth of day.

What does it do, and how does it act? The answer is that it does not do anything, for the simple reason that it cannot, and it does not act because it is powerless. Radiation alone, too slow in its action to cure, can only mitigate a danger which the regulator is unable to alter or affect.

In conclusion, and in spite of your reviewer's almost hysterical appeals to his sanity, and to those "records," the correctness of which he has given us such a shining example, theory, practice, and immutable natural laws all lead us to the conclusion, as already stated in my pamphlet, that, apart from the natural defects of the regulator, the hot water tank possesses inherent disadvantages, so great and so insurmountable that its use must always result in failure and disappointment.—Yours, etc.,

A. ALLAN.

Boscombe, Hants, January 11, 1909.



Restocking Small Poultry Runs.

It is an important question to the amateur who keeps a few fowls in a small run whether it will pay him better to rear his own pullets for replenishing his stock, or to purchase pullets whenever he requires them. The answer must depend upon the conveniences he possesses, and if, as in many cases, he has no other place for rearing chickens than the corner of the garden, or small run, in which his fowls are kept, there can be no doubt that the most economical plan would be to buy. I have come across some amateurs so enthusiastic that they will go to any amount of trouble in order to rear a few chickens in a tiny corner of their small poultry run, and though such enterprise is praiseworthy, the policy is not sound, because it costs so much to rear chickens in such circumstances, and the conditions render it extremely difficult to produce healthy birds that will be likely to give a good account of themselves as layers. Moreover, the plan necessitates depriving the adult stock of a portion of their valuable space, and introduces overcrowding with its attendant dangers. If the amateur has other ground upon which he can rear a few chickens, all well and good; otherwise, I strongly advise him to concentrate his attention entirely upon a few laying hens, dispense with the services of a male bird, and buy pullets to replace the old stock every autumn or every other autumn.

How Long to Keep Layers.

This opens another question—How long should laying hens be kept in such circumstances? I know two or three amateurs who take great pride in their success with fowls kept in a small garden run, and each one of them is firmly convinced that it pays best to clear out and start again with fresh stock every year. One very important reason for this is that these people force their hens for egg production, as every amateur in such circumstances is justified in doing, and they argue very properly that one season of this is quite enough for a hen. One man told me that, when he began, he kept his hens for two seasons, but that they never made a very good show in the second season, took a long time to recover from the moult, and in several instances showed a disposition to develop liver disease. This

is natural, because forced egg production entails a severe strain upon the system, and I do not think it politic to repeat the dose a second time. By selling out in the summer, of course, one must sacrifice the difference between the buying and the selling price; but then, one saves the cost of food during the weeks the hens are moulting, and one gets many more eggs from the pullets than one would from the old hens whose vigour has already been sapped by a season's laying under forced pressure.

What is Forced Egg Production?

Fowls of the smaller, non-sitting breeds, especially Minorcas, lend themselves readily to forcing, which consists simply of giving judicious quantities of stimulating food likely to promote egg production. Let it not be supposed that forcing for egg production has any connection with cramming for the table, for if large quantities of food are given to fowls in confinement, the effect will be just the opposite to what one desires, and the birds will become fat and idle without contributing to the egg basket. There are few amateurs who master the secret of feeding well without long experience and some few initial failures, but the main principle is to give the birds as much good food as will benefit them, and no more. Household scraps, which are much used by amateurs, are stimulating, and when these are served hot and dried off with sharps the effect upon the egg-producing organs is to promote activity as well as to provide material for the maintenance of the egg supply. Then meat has a similar effect, and upon occasions, when the birds lack condition, a little poultry powder will assist in the right direction. Ovary tonic may be used in moderation, and as the amateur gains experience he will discover how best he can feed to promote the desired object, which is to get as many eggs from September or October of one year to July or August of the next. Let me add, however, that in order to keep the birds fit, some hard corn must be given every day, whilst green food, grit and shell are absolutely essential.

Hatching Winter Layers.

Many amateurs ask what is the best time for hatching winter layers, and I should recommend

those who keep the larger breeds, such as Orpingtons, Rocks, and Wyandottes, to set a few eggs at once, and to continue hatching until the end of March. In some circumstances, and under favourable conditions, April pullets will come on to lay in October and November, but, more often than not, the amateur who has had little experience in growing stock will have such birds idle on his hands up till Christmas, and the later birds are always hindered in maturing for laying by the breaking up of the weather in the autumn. The lighter breeds, such as Leghorns, Anconas and Minorcas, develop in less time, and there is no necessity to commence hatching them for another month. It must be remembered that many of the early-hatched pullets will lay a few eggs during the late summer and then fall into moult, so that one might say, approximately, that March and April are the best months for hatching the heavy and light breeds respectively, provided the pullets are well reared and developed.

A Fancier's Scheme for Amateurs.

Mr. H. W. Buckland, the well-known breeder of Columbian Wyandottes, deserves credit for putting into practice the most beneficial scheme for amateur exhibitors ever devised. Mr. Buckland selected four shows, and provided at each two classes for Columbian Wyandottes, open only to genuine amateurs who have never employed a poultry manager or been employed in that capacity, and who have never won a prize of the value of 20s. In each of these classes there were four prizes of 15s., 12s. 6d., 10s., and 5s., for an entry fee of 2s., and points were allotted to the various awards, viz., eight points for first prize, seven for second, five for third, and so on, and at the end of the competition the exhibitor scoring the greatest number of points wins a silver cup value £3 3s., whilst the next four receive medals and substantial sums in cash. Up to the present the competitions have been held at three shows—Cambridge, Wilmslow and Sutton Coldfield—at which large entries have been secured.

PURE VERSUS CROSS BREEDS.

THERE is a great deal of difference between a mongrel and a cross breed, although the two are very often regarded by amateurs as quite similar. A mongrel, which is never recommended under any circumstances whatever, is a bird that contains the blood of innumerable varieties in its veins, no special object having been aimed for in selecting the parents, if indeed there has been any selection at all. A cross-bred bird, on the contrary, is one that contains the blood of two distinct varieties, but in this case the breeder has had a particular aim in view and has chosen the parents accordingly.

If the amateur is a fancier, then only pure-bred fowls will appeal to him, as the others are useless for his purpose. He should realise, as probably he does, that anything but birds absolutely true to type are merely occupying space, consuming food, and involving labour from which he can reap no return. To the utility man, however, it is the economic and not the fancy characteristics that appeal, and it does not matter to him whether his birds possess every show point wrong so long as they are good layers or suitable table birds.

Cross-breed fowls possess several important advantages, chief among which is their hardihood and vigour. If one is living in a cold or exposed situation or upon a heavy clay soil, then it is decidedly an advantage to use crosses, as they are able to withstand the unsuitable conditions much better than the majority of pure-bred fowls. There are a few varieties that are extremely hardy, such as the Leghorn and Redcap, that thrive amid the most adverse surroundings, but as a general rule a cross is far hardier than a pure breed. Another advantage of crossing is that it is possible to minimise defects of an otherwise useful variety—defects that may render the particular breed quite unfitted for practical purposes. Then, again, it is possible in crossing to combine in one bird the good qualities of two breeds; if a table bird and a layer are mated together the progeny will probably be general-purpose fowls.

There are many advantages, on the other hand, of using pure-bred fowls. It has already been mentioned that they are not only advantageous for the fancier, but are absolutely essential, as cross-breeds are valueless. Among other advantages are that pure fowls always possess a much greater selling value, the time the chickens take to reach maturity can be more easily calculated, the breeder knows more exactly what his chickens will be like; and there is always the chance of breeding a particularly fine specimen worth a considerable amount of money.

Many amateurs make the mistake in crossing of mating together two breeds that possess similar characteristics. This serves no useful purpose whatever, except to give added vigour to the offspring. It is useless, for example, crossing Wyandottes and Orpingtons, or Leghorns and Minorcas, as these varieties are practically the same. A cross, on the other hand, between an Orpington and a Leghorn may serve an extremely useful purpose; it should certainly increase the size and number of eggs produced by the pure Orpington; while a much greater proportion of eggs should be produced during the winter than by the pure Leghorn.

SOME HINTS ON MATING POULTRY.

By W. M. ELKINGTON.

THERE is a vast difference between the mating of stock for utility purposes and for exhibition breeding, and though an amateur may be perfectly successful in the former work by selecting stock by appearances, that plan will not answer in breeding fancy stock, because appearances are deceitful, and as a general rule a good breeding bird possesses characteristics more or less distinct from those of an exhibition specimen.

Let us, however, first consider the case of the utilitarian, to whom it is an absolute necessity to select vigorous and healthy stock birds, for without these qualities there can be no real usefulness. The most suitable hens for breeding from are not necessarily the most prolific layers, some of which, especially when forced for egg production, waste so much energy that they are not in fit condition to produce fertile eggs, strong germs and vigorous chickens. The strongest chickens are generally bred from birds that have an unlimited range, since these keep in better condition than those that are closely confined, and it is therefore a great advantage to

have breeding stock at liberty when possible. Mere size is not essential in breeding layers, so long as the birds are of fair average size, for many of the very large fowls are indifferent layers, and are, therefore, as unsuitable for breeding from as the prolific hens that expend all their energy on laying. When table birds are the object, however, size is desirable in both sexes, especially in the hens.

As a general rule, stronger germs and more vigorous and larger chickens are produced from two-year-old hens than from pullets, but whether an old cock is better than a cockerel depends entirely upon the condition. Personally, we prefer to run a well-developed, early-hatched cockerel with old hens, and believe that he will throw just as fine chickens as an old bird, whilst there is the additional advantage that he is more likely to fertilise eggs during the early part of the season, when old cocks are often sterile through delay in recovering from the trying ordeal

advisable to run more than half a dozen hens of the large breeds with one cock. A cockerel can generally be safely given more hens than an old cock, and then, again, the breeding pen must be smaller during the early part of the season, and additional hens can be added as the weather becomes warmer and the male more vigorous. On the other hand, there is an objection to running a cock with only two or three hens, for if he is very active and vigorous his attentions may have a serious effect, even to the extent of causing paralysis; for which reason one should always regard the loss of feathers on a hen's cushion as a sign that more hens are required in the pen, or else the cock should be isolated for a portion of each day.

In breeding for exhibition one must adopt quite a different principle in selecting stock for mating. The introduction of unrelated cockerels is opposed to this principle, for one can only fix the elusive



A JERSEY AMATEUR'S YARD.

[Copyright.]

of the moult. Unrelated males are invariably desirable in breeding for utility purposes, especially for amateurs, for the crossing of unrelated strains makes for vigour and health, and when these priceless boons are secured the utilitarian standard of one's flock can be improved by careful selection. It is unwise to trust entirely to one male bird for the breeding pen, for accidents may occur, or he may prove inactive, and valuable time will be lost unless there is another cock to take his place immediately.

In proportioning the number of females to each male, the character as well as the age of the stock must be taken into consideration. Among the small active breeds, such as Leghorns, a vigorous cockerel may run with ten or a dozen hens, especially if they have an unlimited range, whereas it would not be

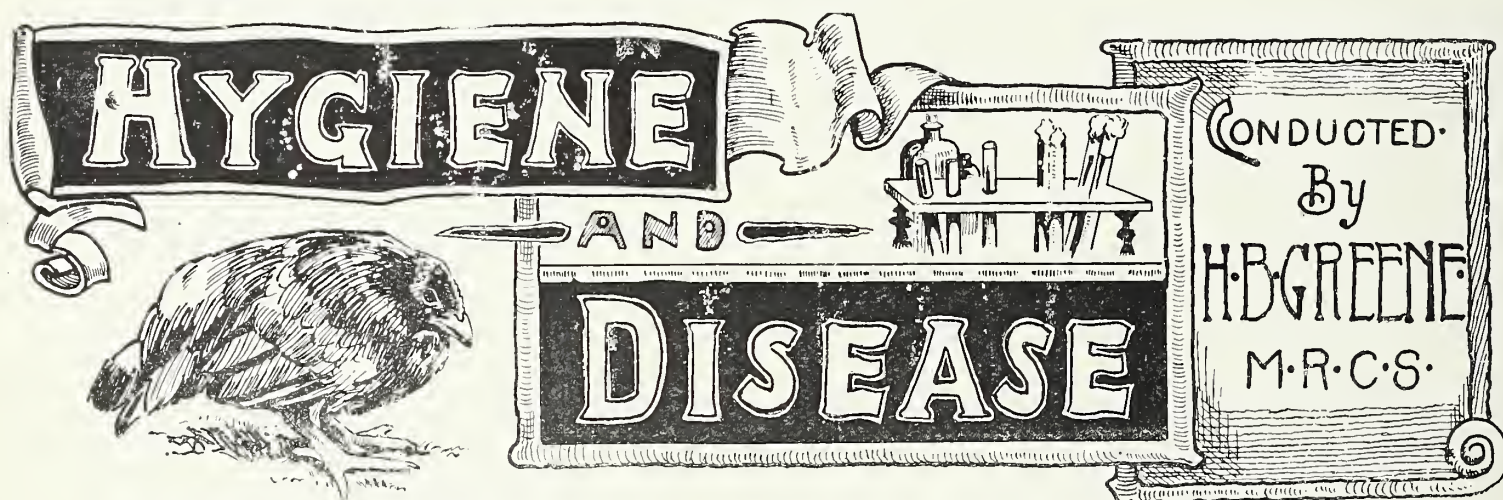
exhibition qualities by breeding closely within the strain and by careful selection of the most likely stock. In-breeding, however, is merely intended to fix certain qualities, which must, of course, originally have been introduced by a system of crossing; but so far as the matter affects the amateur, if he has secured stock in which certain qualities exist, he must in-breed if he wishes to fix and develop those qualities, and if he resorts to unrelated cockerels he will, of a certainty, lose the desirable show points in his stock and cause reversion to the original defects in the parents from which his birds were bred.

The first lesson in breeding that the amateur fancier should learn is that like does not necessarily produce like. If he mated together the finest speci-

mens of male and female he would, in nearly all varieties, produce nothing but rubbish, because in some cases the best breeders possess characteristics distinct from those of the best show specimens, whilst in a very large number of breeds it is necessary to resort to double mating, which means the mating of separate pens to produce respectively the best cockerels and the best pullets. In a great many instances cockerel breeding strains and pullet breeding strains are kept distinct, whilst in others certain classes of birds of the same strain are selected for producing the best males and the best females. But it is impossible to explain fully the principle of double mating in the space at our command, and the amateur fancier would do well to study a book that deals with the question of exhibition breeding in a complete manner.

The fancier of experience bases his matings upon the result of the breeding operations in former seasons, for which purpose he keeps a strict pedigree

of his stock and can tell in a few minutes how each chicken is bred and what every old bird has produced. Such knowledge is, of course, the secret of successful mating, and amateurs who intend to breed winners must follow the example. If, for instance, one starts with a small pen of birds, purchased from and mated by a breeder, one should keep a pedigree of all that one breeds, by ringing the chickens, so that at the end of the season one can see which hen has produced the best specimens. The knowledge thus gained will be of great advantage when one comes to mate up next season, and it is because so many amateurs ignore the necessity of keeping pedigrees, and trust to chance matings, that failures so frequently occur. When things have to be left to chance, as sometimes happens even when pedigrees are kept, it is good policy to try several matings during the season, by changing the males or the females, which plan provides more opportunities of hitting upon the happy mating that produces show specimens.



POST-MORTEM EXAMINATIONS.

We have made arrangements by which post-mortem examinations of poultry and game can be effected for our readers upon the following conditions:

1. *The specimen is to be forwarded postage or carriage paid and securely packed to "Biologist," 297, Trinity Road, Wandsworth Common, London, S.W.*
2. *The fee of 2s. 6d. (stamps will not be accepted) must be remitted with each specimen and a letter giving particulars of feeding and housing, or any symptoms which were observed before death.*
3. *Birds should on no account be addressed to the office of the paper. If forwarded there they will be returned to the sender.*

It is recommended that specimens be despatched by parcels post, where practicable, and as soon after death as possible. A reply will be received by letter, defining the disease, its cause, treatment, and prevention.

Yew Poisoning.

A recent issue of our contemporary, the *Field*, contains a most instructive article concerning the poisonous properties possessed by the leaves and berries of yew trees, several dead pheasants apparently so poisoned having been lately forwarded to that paper for examination. The generally accepted view seems to be that while the leaves are poisonous to man, domestic animals, and birds, the red berries are injurious only in so far as their seed contents are

concerned, the outer sticky muelage surrounding the seed being harmless. One authority suggests that when the berries are eaten by birds, the inner seed or pip is not swallowed. It may be so, but we have certainly known Turkeys devour quantities of the entire berries, jumping up eagerly to get at those out of reach, and suffer no ill effects. The subject is one of which some of our readers must have gained a practical knowledge. We should be glad to hear from any such who have ever had poultry poisoned in this way.

Deformed Eggs.

Fantastic and various are the shapes occasionally presented by the egg after it has traversed the devious passages of the reproductive tract. Yet when we reflect how intricate are the stages through which it has to pass, what delicate and easily disturbed mechanism controls separation of the ripe germ-bearing yolk from the ovary, and how, with an accuracy that seldom fails, the imperfect ovum enters the oviduct, there to become first enshrouded with albumen, and later protected with a coat of lime, the wonder is that deformity is not the rule rather than the exception. It is not alone by reason of their curiosity that deformed eggs should claim our attention; they are often the signs of unhealthy disturbances in some portion of the tract that can and ought to be corrected. A common deviation

from the normal is in respect of size. The diminutive egg, sometimes no larger than a walnut, and the monster, weighing, it may be, four ounces, when habitually laid of those sizes, are indications of some existing inherited malformation in the oviduct of the layer, or else they signalise the approach of cystic disease of duct or ovary. But whenever eggs of this unique type arrive at intervals during or near the end of a laying period—and such eggs are generally without yolks—they denote that the ovary, whose functions include the formation of yolks, has suspended work either because of congestion or from natural causes, while the oviduct still continues to contribute albumen and shell in irregular quantities. Then again, we have eggs with a soft shell, and those without shell of any kind. They may appear singly or in a quaint string of membranous bladders full of the white substance of egg, and with or without yolk. They are said to occur from a lack of grit and shell material in the diet, but they are more often caused by inflammation of the oviduct through chill, sexual excess or over-stimulation by food and condiments. A rarer deformity is the combination that is best described as “the egg within the egg.” A small egg perfectly endowed in yolk, white, and hardened shell is encased within another larger egg equally perfect in its parts. This cannot be considered as a modification of the double-yolked egg, for it is clear that since the coating of lime-salts is the final process to which the ovum is subjected and occurs in the lowest portion of the duct, the small contained egg must have arrived at that point and become hardened some considerable time before it was overtaken and entangled in the albumen of the later arrival. The ordinary double-yolked egg in its elongated or large shell is familiar to all, and many are the discussions waged over the possibility of two perfect chickens emerging from it. Authentic instances have certainly been recorded by trustworthy observers in evidence of its occurrence. But the chances must operate against two chickens obtaining sufficient air in one shell to permit of the development of both; one or other would be likely to die, and, decomposing in the shell, thereby handicap the survivor. Positive assertions are also at times made that, say, eleven eggs placed under a hen have resulted in twelve chicks, but those who make them forget that a broody hen will often decline to accept the popular superstition of luck in odd sittings, and persist in laying the twelfth egg on her own account, before settling down to the serious business of her task.

White Diarrhoea in Chickens.

Mr. Victor Fortier, of the Central Experimental Farm, Ottawa, Canada, has recently published some interesting particulars dealing with his experiments relative to the cause of chalky or white diarrhoea. This disease, happily hardly known in this country, accounts for the death of thousands upon thousands of chicks in Canada and the States every season, and a great amount of attention is being directed to it by the various colleges and institutes. Mr. Fortier advances the theory that the disease is due to the bad treatment the youngsters receive directly after hatching. In Canada and America the hot-air type of incubator is almost universal, and it is so constructed that, on hatching, the chicks fall from the egg trays to the lower part of the machine, which

is some 8° to 12° lower in temperature, before they are dried off. The effect of this, it is stated, is to give a sudden chill to the kidneys, causing an abnormal secretion of urine, which is probably one of the principal causes of this complaint. The results of two experiments in this connection are given, and they go to uphold the view taken by Mr. Fortier. With the chickens which were allowed to dry off on the egg tray itself at a temperature of about 103°, the disease did not show itself, but in those batches where the drying off process was carried out below the egg tray at a lower temperature, by the time they were removed to the brooder 25 per cent. were suffering from white diarrhoea, and at the end of three weeks 50 per cent. were dead. To prevent the appearance of this disease great care should be exercised at hatching time, so that no sudden draught of cold air is allowed to penetrate to the compartment in which the chicks are kept.

DIPHTHERITIS IN POULTRY.

By LOUIS W. SAMBON, M.D., F.Z.S.

BIRDS, like other animals and man himself, are subject to a severe infectious disease, the most striking characteristic of which is the formation of a peculiar exudation membrane—the so-called false membrane—over more or less extended areas of the mucous surface of the body. This membranous distemper is known to poultry-breeders by the name of roup, which means hoarseness. In its mildest form, when limited to the tongue, it is called pip. It is a disease of considerable importance, not only on account of its deadliness and attendant pecuniary loss, but more especially on account of its possible relation to the diphtheria of man.

Our knowledge of the causation and spread of avian diphtheritis is still very unsatisfactory and the question of its relationship to similar affections in other animals and man is far from settled. Unfortunately, investigation is not progressing as rapidly as it should owing to lack of support and assistance from those who, suffering most from the ravages of the disease, should be most eager to stamp it out. But the advantages of scientific research are not yet sufficiently appreciated, and the expert investigator is seldom given the opportunity of studying outbreaks of disease on the spot. All he can hope for is to receive, from time to time, some decomposing beast, and be thankful for it because the majority of farmers, however severely visited, will not even trouble to do as much.

Like tuberculosis, diphtheritis is a wide-spread distemper, both geographically and zoologically. It occurs all the world over, and in birds and mammals belonging to the most diverse orders. Amongst birds, it is known to occur in fowls, ducks, geese, guinea-fowls, turkeys, peacocks, pheasants, partridges, pigeons, sparrows, and parrots. I have observed it myself in pigeons, pheasants, partridges, sparrows, and also, for the first time, I believe, in the grouse. It is exceedingly common amongst pigeons, both wild and domestic, frequently breaking out in vast and deadly epizootics. Indeed, it is not improbable that to this formidable disease we owe the total

extinction of the American passenger pigeon (*Ectopistes migratorius*) at one time so amazingly abundant. A parallel instance of the extinction of certain species by disease producing microbes is that of cattle due to the rinderpest in Africa. Last winter I had the opportunity of investigating a severe epizootic amongst wood-pigeons, which extended a considerable distance along the Thames Valley. In one small wood, near Henley, no fewer than 1,142 dead birds were picked up in two days. All had succumbed to diphtheritis.

Avian diphtheritis is an acute and grave disease, especially in young birds. Mature, strong animals are more resistant. In them the disease may assume a more chronic course, or manifest itself in a very mild form. As a rule, prostration is very great from the outset. The affected bird is dull, listless, and depressed-looking, the wings are kept apart and drooping, the eyelids closed. The comb and wattles become flaccid and dry, the visible mucous membranes pale, the feathers ruffled. Towards the end of the disease there may be considerable emaciation, sometimes diarrhoea, always a foetid, unmistakable odour. Contrary to the assertion of certain writers, the temperature never rises to an inordinate height, but, as in human diphtheria, is low in comparison with the acuteness of the systematic disturbances.

The characteristic lesion, the false membrane, consists of a layer of exudate, which, coagulating, forms a net of anastomosing fibrinous threads, enmeshing the degenerated outer cells of the inflamed mucous membrane. It may be thick and elastic, or thin and brittle, according to the relative proportion of degenerated cells and fibrinous exudate.

At first the affected part looks reddened and slightly swollen. Very soon a thin bluish-white deposit appears on its surface. The deposit gradually increases in thickness, and becomes a tough membrane, generally yellowish-white in colour, but sometimes brown or even almost black by having coagulated blood incorporated with it. At this stage the false membrane adheres so intimately to the part that forcible removal exposes a raw bleeding surface. Later it exfoliates, and may be thrown off in perfect casts.

The false membrane may appear on any mucous surface, and, occasionally, also on the skin adjoining the natural openings, such as the corners of the beak or eyelids. The nostrils, the mouth, the pharynx are the parts earliest and most frequently affected. From the fauces the disease usually spreads to the larynx, and may extend down the bronchial tubes into the air cells of the lungs. The alimentary tube may also be invaded. The false membrane may develop within the crop and intestinal cæca, as I have had the opportunity of observing more than once. The cæca may be completely filled and greatly distended by the exudate, which often forms one solid mass of concentric layers of crumbling membrane. The oviduct may also occasionally be affected. I have seen it in the pheasant completely plugged by the characteristic exudate, others have noticed it in fowls and ducks. The occurrence of diphtheritic patches in the oviduct explains my finding shreds of false membrane in the white of a fowl's egg. They must have become enveloped in the albumen during the formation of the egg, just like parasitic worms occasionally become entrapped whilst wandering into the oviduct. On separate occasions I found a tiny

flake (*Prosthogonimus ovatus*) and a small round worm (*Heterakis papillosa*) in the albumen of fowls' eggs. Bacteria and fungi of many kinds have been described from the eggs of birds again and again.

When the bird's nostrils are plugged by the exudate, respiration becomes laborious and snuffling. The bird sneezes and frequently shakes its head to expel the profuse obstructing discharge. When the larynx also is affected breathing is far more difficult. The bird sits back on its tail with the head outstretched and the beak wide open, emitting whistling and wheezing noises, which commingle with rattling, coughing and panting.

Large accumulations of exudate within the nasal cavities frequently give rise to tumours of unequal size, which may greatly disfigure the bird's head. These swellings appear between the root of the beak and the inner angles of the eyes. They may attain the size of a walnut, displacing the eyeball and distorting the beak. If opened early they are found to contain a thick creamy fluid or soft cheesy substance. After a time the yellowish contents become dry and crumbly.

Not infrequently the conjunctiva becomes involved, the eyelids swell and show a great tendency to stick together. The exudate is first seen in flakes, but it rapidly forms into a thick membrane, which may be followed by severe destructive changes in the eye itself.

As in the diphtheria of man, so in avian diphtheritis, the specific membranous inflammation is accompanied or followed by the no less characteristic paralysis. This symptom has been noticed in fowls, pigeons, pheasants, turkeys, and ducks by several observers. I have seen it myself unmistakably in pigeons. During last year's epizootic, pigeons quite unable to fly or stand were sent to me from the affected districts.

The course of the disease may vary considerably. In young birds, and especially in young pigeons, it is very rapid. In fowls it may last for weeks, and even months. As a rule it terminates in death, but occasionally the process may be limited to the pharynx, or manifest little virulence, and strong, well nourished birds may recover. Like all other diseases, diphtheritis may show more or less severity in its various outbreaks. I am inclined to explain such variations by the different properties acquired by the specific microbe in its previous zoological and anatomical habitats. Thus the disease may be either more or less virulent if contracted from an animal belonging to a different species than from individuals of the same species, and a parasite accustomed to live in the mouth is far less dangerous than one which has acquired a special aptitude for the larynx or the lungs. This belief is founded, not only on natural facts, but also on the result of experimental investigation. Bacteriologists are constantly either exalting or attenuating the virulence of disease-producing microbes by successive passages through the organisms of different animals, and they have noticed many a time that microbes obtained from a diseased organ when introduced into other animals localise themselves in that part which was attacked in the first subject. Of course individual susceptibility and the multitudinous ever-changing environmental conditions are likewise factors which must be taken into account.

(To be continued.)



BREEDING PENS, DITTON LANGLEY, BUCKS.

[Copyright.]

A DORKING SPECIALIST.

DITTON FARM, where lives Mr. A. C. Major, lies about $1\frac{1}{2}$ miles from Langley Station, and two miles from Slough, and is situated in pretty Buckinghamshire country, a few hundred yards away from the main road to Bath. The farm consists of some 300 acres of arable land and grass. Mr. Major has occupied it for seventeen years, and his association with the neighbourhood has been longer. His association with farming in general, and with the breeding of Dorking fowls in particular, has been longer still. He became interested in poultry, as an important branch of the farmer's business, at a very early age, and from the first he inclined more towards Dorkings than any other breed. He has retained his affection for and his interest in them to the present day, with what practical success the prize lists at the principal shows throughout the country amply demonstrate. These facts, briefly stated, will suggest the type of fancier

Mr. Major is. He belongs to the order of those who are born not made. He may be said to have inherited poultry in the blood, and—if he will forgive us for the expression—to have developed Dorkings on the brain.

The fact, moreover, of his general farming experience, combined with that of his early and late specialisation in Dorkings, helps to explain his methods in breeding as well as to account for his success. The really practical farmer, he who has inherited the instinct for his calling, is rarely a faddist. Mr. Major is essentially a non-faddist. While he keeps his eye on the many poultry inventions that are brought out every year, on the hundred and one devices for saving the amateur time, trouble, and thought, he is exceedingly sparing in his use of such modern conveniences. It is not that he despises them, but simply that he finds he can do without them to a very great extent. Thus he

TRADE SUPPLEMENT

owns but three incubators, which he uses only when no hen is available for hatching; and his preference for the natural method practically rules out the foster-mother. In regard to the health of the birds, Mr. Major may be said to follow the common-sense principles that have been approved by him and usage. Owing to his possession of many acres of grazing land, he can employ the colony house to an almost unlimited extent, the frequent changes of site that are so necessary being possible in a degree unknown to the poultry keeper who is cramped for room. In the matter of feeding his arrangements are not less orthodox and simple. A patent cooking-stove of a well-known and excellent make is set going about mid-day, and by means of this the hot meal is prepared for the next morning. He is no believer in the dry-food system for chicks. He considers—with self-evident justification—that variety

and good quality are the two essentials, besides which other things are of minor importance. A little dry food is, in his opinion, better than a feast. Neither does he put faith in any one of the patent food preparations now on the market. The fact of the matter is that his farm supplies most of the grain and green food he requires, including plenty of "red" wheat, and as the economy of his

poultry-keeping is closely interwoven with that of his general farming, he has no need to go outside, even if his inclinations dictated that course. Sussex ground oats, pinhead oatmeal, well sifted to eliminate the husk, biscuit meal, and boiled rice are other staple ingredients of his food supply.

The breeding pens at Ditton Farm are eighteen in

number, and vary considerably in size and shape. Generally speaking, their inmates consist of a cock or cockerel, with from five to seven or eight hens or pullets, the number varying in accordance with season, and with the age and virility of the male. The varieties kept are chiefly Silver Greys, Rosecombs, and Darks; but we also observed a pen of Cuckoos, and it should be noted that Mr. Major is one of a very small number of breeders of these. We have not the space to describe the pens



[Copyright.]

"NULLI SECUNDUS"—Winner of Challenge Cup, etc., at Crystal Palace, 1907.

in detail, but it may be said that the majority of them contain winners at important events, and one or two may be singled out as specially worthy of notice. Thus the Silver Grey cock, whose portrait we reproduce, won the Challenge Cup and Poultry Club medal at the Palace in 1907, while among the pullets of the same description and pen were no fewer than five winners. No. 12,



THE "GREEN" HOUSE.

[Copyright.]

again, was an important cockerel pen, of which we are able to give a picture; and No. 13, containing two cockerels and thirty pullets, is, at any rate, worthy of remark, as being not less than sixty yards in length. The cockerel pens are about twelve yards by eight, enclosed with wire netting approximately six feet in height, which is boarded up to three feet. In those pens which adjoin each other the dividing wire netting is thatched to the height of about a yard, partly for the purpose of preventing a draught, and partly to prevent the birds fighting. The phalanx of pens, as it might be termed, is out-flanked by a number of single houses and runs, the type of which is shown in our illustration, dotting the large meadow which contains the principal portion of the poultry plant. In one corner, admirably protected on one side by the boundary fence, and above by the umbrella-like canopy of a magnificent silver fir, the first chicks of the year were being tended; and—to hark back to the food question for a moment—one may mention that Mr. Major's principle, in regard to forcing growth, is to feed



Pen No. 12.

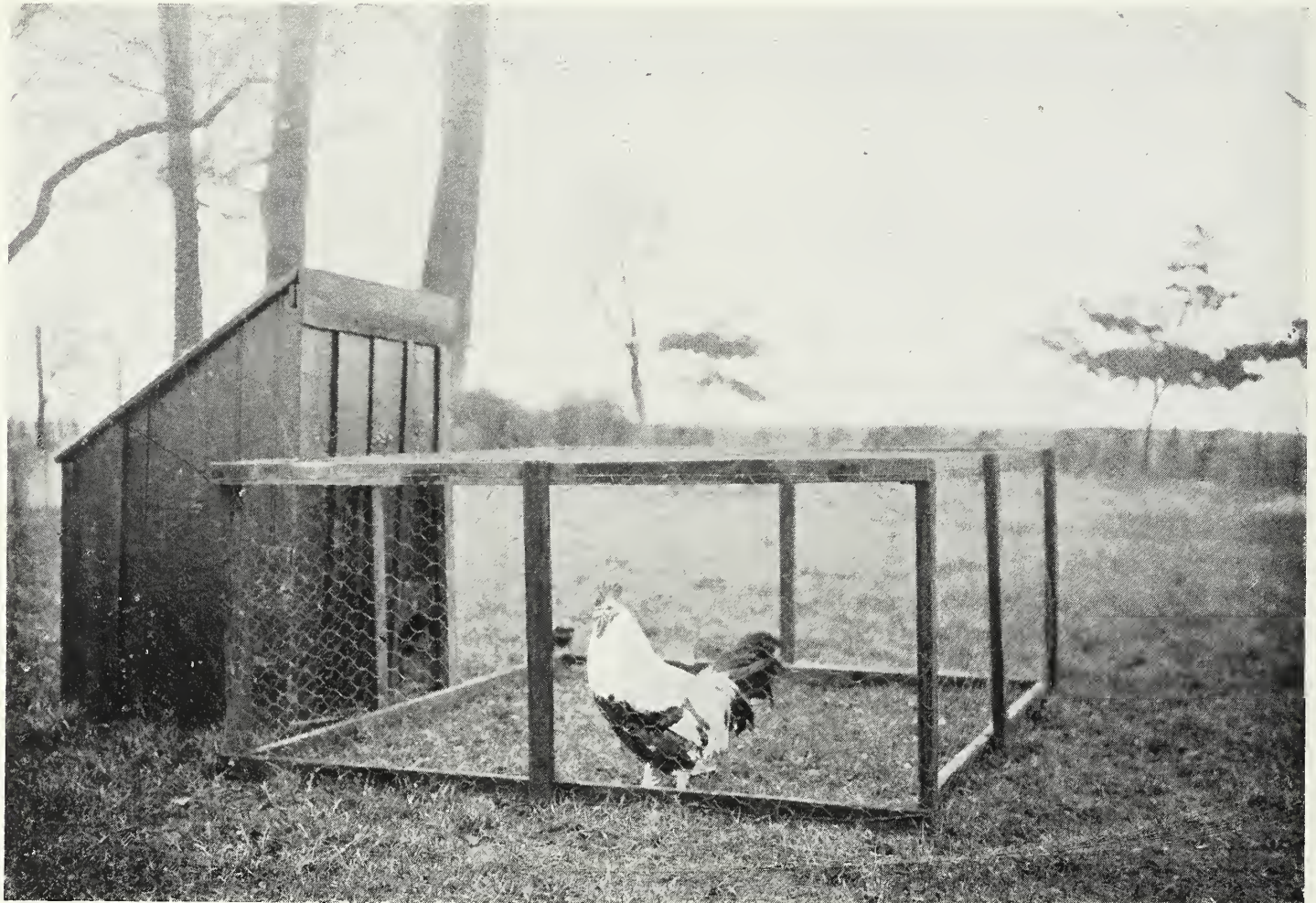
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TRADE SUPPLEMENT

chicks moderately but often, and that he starts with administering a meal about every two hours.

Stress is laid upon the quantity and cleanliness of the water supplied to the birds, and the red earthenware vessels that contain the liquid are distributed profusely over the ground: While there is ample shade in summer—there are few pens that do not contain one or more fruit trees—the importance of sunlight is not overlooked. The tarred houses are designed with an eye to proper ventilation. A theory—or perhaps a heresy—of Mr. Major's, in connection with

so he breeds less for size than for quality, and less for the passing Fancy fashion than for the true and permanent Dorking type, with its breadth of breast, white flesh, and low-set body; and for the bird that will make a good layer, or, at any rate, a fair one, as well as a good meal. His success with the judges, gained in spite of a slight distrust of some modern appliances considered indispensable by others, and in face of certain natural disadvantages, such as a rather too heavy soil, is proof enough of the soundness of his aims and of the means whereby he achieves it.



A COCKEREL PEN.

[Copyright.]

exhibition birds, may be quoted here, which is to the effect that there is nothing like sunlight for securing the purity of the whites in plumage! Nor is it only in this respect that Mr. Major, regarded strictly as a "fancier," is not quite orthodox. For instance, he is content not to breed specifically for size, holding that, other circumstances being favourable, "size will come." Moreover, one of his several missions in life is to prove that the Dorking, so long regarded as a table bird only, can be made almost as good a general purpose fowl as any of the breeds that have gained reputation under that head. And

Mr. Major keeps two or three other breeds. We noticed a pen of White Wyandottes, and he has three or four Polands, some Muscovy ducks, and some Homer pigeons. But the Dorkings are obviously his life interest. His manager, Mr. Frank F. Conway, who has been with him about three years, is well known to the Fancy. He gained most of his experience, which is that of a lifetime, in the North of England and in Scotland, where he achieved considerable success in the show pen. We are indebted to his courtesy for much of the information that appears in this article.

ANSWERS TO CORRESPONDENTS.

The Editor will be glad to hear from readers on any Poultry Topics, and all Queries addressed to the paper will be answered by experts in the several departments. The desire is to help those who are in any difficulty regarding the management of their poultry, and accordingly no charge for answering such queries is made.

Number of Hens.

"In mating for fertile eggs how many hens can I run with a well-grown cockerel on a practically unlimited range over fields and farmyard? My birds are a farm stock, selected for producing chickens for sale to a dealer who sends to market. There are plenty of buildings for shelter, and a great deal of food to be picked up about the place. I have had plenty of eggs in the past, but this is my first attempt to raise a number of chickens for sale, so fertility is now more important."—E. C. J. (Millbrook).

It is impossible to lay down any hard and fast rule in this matter, one of the most important considerations being, of course, the vigour and general fitness of the male bird; but there are other things to take into account, such as the time of year, the character of the season, and the nature and extent of the run—a point you have evidently appreciated. In general it is found, relative to the last condition, that a young and active male is capable of fertilising the eggs of more hens when all are running free than would be the case in closer confinement; but, on the other hand, the cockerel must not be too young or he will be undeveloped, and a robust constitution is very essential to the maintenance of health and condition. The text books usually impose rather narrow limits regarding the number of hens it is safe to mate at this season, and from about eight to a dozen is often regarded as the maximum for any breed—and breed is a factor in this matter; and in view of the several circumstances in which birds are mated one cannot say that the authorities are wrong in thus severely restricting the numbers. Nevertheless, amid such surroundings as yours, and for such a purpose, it may well be that you can safely increase the number without any very great risk; and working under very similar conditions we have had good results from flocks of twenty-five, viz., at the time of mating, because you must remember that presently some will be sitting and some rearing.

Cooling Eggs.

"I have unfortunately left the egg tray out of my incubator by mistake for the greater part of a morning; the eggs are in their second week of incubation. I shall be greatly obliged if you will tell me whether there will now be any hatching result, and about what is the proper time to cool eggs."—W. T. C. (Gillingham).

Provided the temperature of the room was not unduly low, and the eggs were not placed in a draught, it is probable that no great harm has been done. There is less risk of failure to hatch strong chickens through over-cooling than by under-cooling, and there are many instances in which nothing more serious than a very slight delay in hatching has resulted from forgetfulness of much longer duration than yours. As an extreme example of embryonic vitality we remember the instance of a partridge being driven from her nest of eleven eggs during a spell of

severe weather in 1903. The eggs were kept under careful observation, and were cold to the touch for forty-eight hours, when the bird returned and continued incubation. Four days later there were nine young partridges in that nest. This is not an example to be followed, but is related for your cheering. Eggs within an incubator of proper construction will not be deprived of a constant supply of oxygen even if there is no methodical cooling, but practical experience proves that the inclusion of that operation in the daily routine is productive of better results than follow its omission. Cooling is not so much a matter of maintaining vitality as of increasing and hardening it; but, despite our extreme examples, there are in general certain limits beyond which the hardening process should not extend. Experience is the best guide regarding the best periods for different seasons and in different circumstances; but, as some indication, it is generally safe to leave the egg trays out at this season up to about fifteen minutes with a room temperature of 50 degrees, and up to twenty minutes with a temperature of 60 degrees. During the first week the periods should be shorter, but all such rules are liable to modification according to individual circumstances.

Place of Bran in Feeding.

"Is bran a good food for use in mash feeding; some say it is and others recommend me to leave it out—what is your opinion? I may say that I am very pleased with your magazine, which I now add to my weekly journals as a fitting monthly completion and commencement."—A. G. (Esher).

There are two opinions about most things, including bran; and some feed it too freely, whilst others leave it alone. If used in due relation to other feeding stuffs, properly prepared, and fed at certain ages and for definite purposes, it is beneficial. It may very well form a constituent of the rations fed to laying stock, for alternate use with other mixtures, in the proportion of about one-third of the total weight of each food allowance—the other ingredients balancing the combined value. It is relatively cheap, which probably accounts for its too free use in some cases, but if used with discretion it adds usefully to the bulk of a mixture; and if properly scalded the fibre is less likely to produce injurious effects, whilst the nutrient value is more fully secured by the fowls. Damping is not enough, it must be thoroughly scalded, otherwise intestinal irritation is unduly set up and a rapid evacuation of the whole of the partly-digested food takes place; hunger quickly follows, and not only is a great proportion of the nourishment of the whole ration lost, but unnecessary risks of digestive disorders are incurred. In addition to its inclusion in the winter warm mash for laying hens, it is usefully employed in mixtures fed to ducks and ducklings, but should be carefully used in feeding chickens. Although a proportion of sharps or pollard

(which is that portion of the bran which is more finely divided than the rest) may safely be fed to young chickens, bran itself should not be introduced until some considerable growth has been made. It may be fed to any birds (except young chickens) whose previous feeding has been too concentrated or fattening, but must be eliminated in the event of diarrhoea or similar disorders. Many thanks for your appreciative remarks.

SHORT REPLIES.

- B. W. T. (Cork).—The Aylesbury.
 M. S. (Saffron Walden).—Twenty-one days.
 E. B. (Carlow).—See reply to "E. C. J." above.
 M. A. (Derby).—The latter part of February or during March.
 S. T. (Aberdeen).—See article in this issue on "Feeding Stock in Winter."
 E. A. B. (Staines).—The secretary of the Poultry Club is C. Tyrwhitt-Drake, Cobtree, Sandling, Maidstone.
 C. A. R. (Reading).—It is against our rule to recommend any particular appliance maker. There are several advertising in this issue, who could supply you with what you want.

THE UTILITY POULTRY CLUB'S YEAR-BOOK AND REGISTER, 1909.

FOR some years the Utility Poultry Club have published a Year-Book, and the new one for 1909, issued from the publishing office of the club, 68B, Lincoln's Inn Fields, W.C., is in no wise inferior to any of its predecessors. Following the usual form of publications of this description, the book gives full details of the privileges of membership, the rules of the club, the advisory board—consisting of some twenty well-known experts who advise members gratuitously—and a full list of the 1,300 members who form the club.

The monthly notes for poultry keepers, which have become an important feature of the book, are again included, as also the details of all the laying competitions held by the club since its inception in 1897, and there are various tables and other information of use to the utility poultry keeper.

In the review of the work of the club during the past year the editor alludes, among other matters, to the successful carrying out of the Twelve Months' Laying Competition and to the grant by the Board of Agriculture and Fisheries towards the expenses; to the Six Months' Laying Competition, now being held by the Street and District Depot under the auspices of the club; and to the questions that have arisen on the Agricultural Rates Act and on poultry-keeping and the preservation of foxes. We observe that a considerable number of special prizes have been granted by the club at local shows for table poultry.

The strong financial position of the club appears to have been well maintained, the total receipts for the year, including £63 brought forward, amounting to £387, from which a balance of £102 is carried forward to the next account.

The book is certainly a very useful publication, and no doubt it has been the means of greatly increasing the popularity of the club, to the members of which it is given gratis upon payment of the current subscription.

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Any of the following books will be supplied at the prices named. Cash must always accompany orders.

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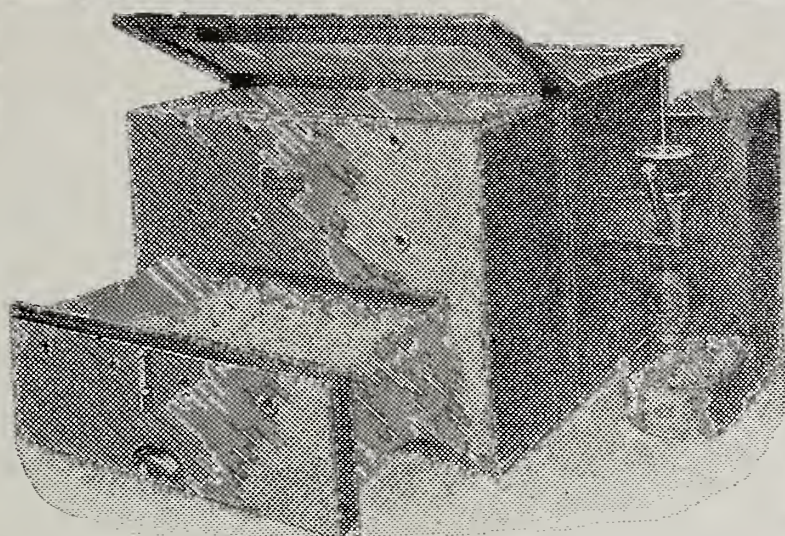
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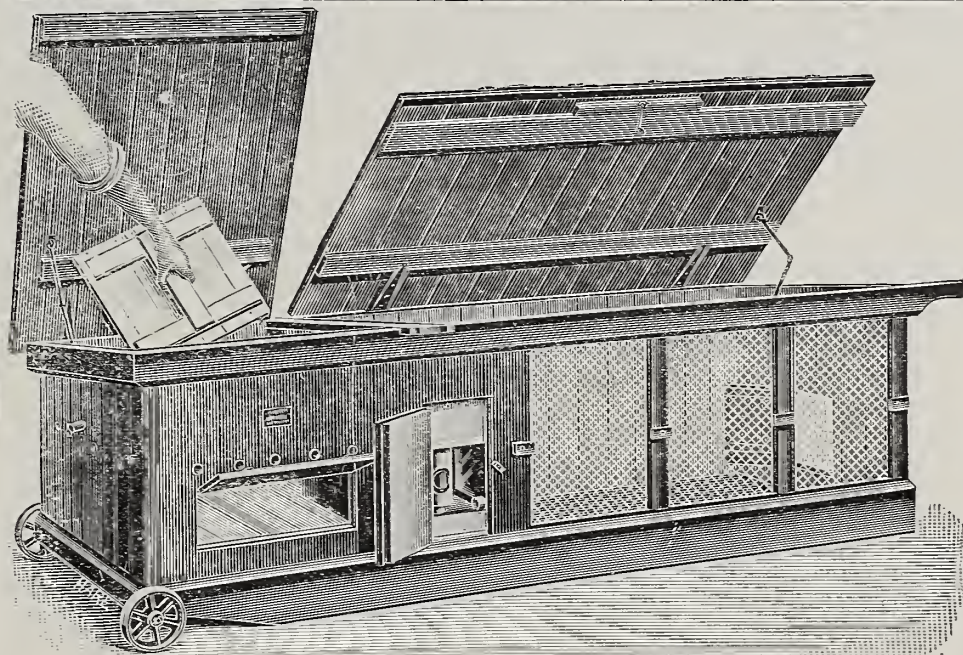
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NOTES FROM CORRESPONDENTS.

GRAZING FARMS AND POULTRY.

By F. PARTON.

IN the Worth Valley, which runs from Keighley to Colne, a great number of small grazing farms are to be met with, ranging from ten to twenty acres in extent, and on these farms poultry play a very prominent part. The history of many of these small farms is a very interesting one. All along the river Calder, which flows down the beautiful valley, cotton mills have sprung into existence, taking the place in the manufacture of cotton which, in earlier times of cotton weaving, the hand-loom occupied in regard to the making of sheets and other articles owing their origin to this craft. Each operative had his own loom and worked it at home, the home consisting of a cottage with about an acre or more land to it; a cow and poultry or pigs and poultry helped to eke out the somewhat scanty living that could be earned by the hand-loom alone.

A few weeks ago we had a very interesting conversation with an old man, one of the few remaining links with the days of hand-loom weaving, who had been engaged 50 years ago in this work, and in his youth had been an enthusiastic poultry keeper. He waxed quite eloquent over the wonderful laying powers of his "pheasanty" fowls and crested spangled Hamburgs of fifty years ago, when eggs were thought dear at twenty-four for a shilling, and chickens exorbitant for consumption at 1s. 2d.!

With the introduction of machinery for weaving, the hand-loom soon became a relic of by-gone days. As one machine could do the work of several men, employment for all became an impossibility; thus some were led to seek other occupations in another part of the country, and those remaining, who did not find employment in the mills, gave all their time and attention to the land, which hitherto had merely been an adjunct to the hand-loom. Owing to the migration of many of the villagers, the plots of land lay idle for a time. Then came about the concentration of several of these one and two-acre lots into one holding, and we thus have the commencement of many of these small grazing farms so numerous near the dividing line of Lancashire and Yorkshire.

On every one of these farms a fairly large number of fowls are to be found, and as eggs are the product mostly in demand, breeds of the non-sitting type are chiefly kept, and of these White Leghorns and Hornets are favourites; the latter breed is rarely, if ever, seen out of Lancashire and the West Riding of Yorkshire.

The old-time custom of exchanging eggs for groceries and articles of drapery is still in vogue among many of these poultry keepers, and even with this antiquated system the direct testimony we have as to results is simply wonderful, and more than once we have heard the remark that the rent day would be dreaded if it were not for "t'old hens." Were some systematised method of collection and marketing adopted, by reason of the close proximity to large and thickly-populated industrial centres, the Worth Valley would undoubtedly become one of the greatest egg producing districts in England.

NOTES FROM WALES.

By A. T. JOHNSON.

The winter show season just ended has been one of the best on record in the Principality. I have not heard of any serious losses having occurred, while, on the other hand, several societies have vastly improved their financial positions, not to mention their reputations. The great increase in the number of small shows, although generally maintained by fanciers, must indicate an increase in utility poultry-keeping also, for there are not many of the "feather" worshippers, scornfully referred to by the lay Press, who are not utilitarians as well. They cannot very well help being so.

Except in Anglesey and a few isolated places on the mainland, duck-rearing is in a very elementary stage. It does not seem to have moved ahead one little bit during the last twenty years, which is to be regretted, seeing that the summer market, in the North and West at any rate, is at the people's very doors.

The Plymouth Rock is still a favourite with the peasantry, taking the country generally; but although what they say as regards the hardness and quick-growing attributes of the Rock as a chicken may be true enough, I feel sure that a touch of some lighter, more active bird would bring better all-round results. Those who have, for example, tried the Houdan sire with the "variety troupe" of the farm-yard have been so well pleased that they are not inclined to risk a change. The mild weather that ushered in the year brought with it a sudden response in the egg yield all round, and I have heard of some good lots of chickens being hatched. Guinea fowls, so far as local supplies go, are scarce, and poulterers have to go outside for their supplies.

IRISH NOTES.

By MISS MURPHY.

Miss Hickey has taken such a fancy to South Tipperary that she has decided to make her home there, and before these lines appear in print she will have joined an old and well-known family, the Shees of co. Tipperary. Her retirement is greatly deplored by the county, owing to the excellent work she did during her short term of office. Miss Thornton is making her influence felt in co. Waterford, where she has already added three new turkey stations and two new egg-distributing stations to those already existing in the county.

As a result of the sessional examination in poultry-keeping, held at the Munster Institute, on December 18, 1908, the Misses A. Walker and S. Murphy have been placed on the list of instructors in poultry-keeping, approved of by the Department of Agriculture and Technical Instruction for Ireland. Although it is still early in the season, we have had numerous reports from poultry keepers that eggs are hatching well. Here we have a very high percentage of fertility and the old birds are laying freely. As usual, the three varieties of Sussex lead the way as early sitters, all the broody hens to date being of either the Light Speckled, or Red variety of this good old breed.

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“CLARENDO” POULTRY FOODS

“Clarendo” A 1 Quality, 14/- per 112 lb.
Cooked Corn A Utility, 10/6

“CLARENDO” LAYING MEAL

Price 12/6 per 112 lb.

ANALYSIS by Prof. LLOYD, F.C.S., F.I.C.

Albuminoids, 20.43. Carbohydrates, 48.20
Oil ... 9.36. Mineral Matter, 6.80.

A wonderful food for laying hens.
All carriage paid. Cash with order.
Samples and particulars free.

WHITE, TOMKINS & COURAGE,

48, Mark Lane, LONDON, E.C. LTD.
LIVERPOOL. Established 1841. BELFAST.

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LECTURES should always be illustrated, as by this means their value is greatly enhanced and made more effective.

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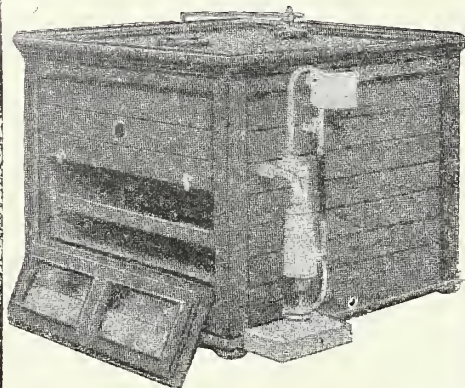
has been designed to meet the requirements of Lecturers and Poultry Keepers, County Council Committees, Societies, and Clubs. It is most complete and up-to-date in all respects.

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BROWN, DOBSON & Co., LTD.,
15, ESSEX STREET, STRAND, W.C.

YOU MUST HAVE A TRIUMPH INCUBATOR



Patent (No. 5687).

**Worked by Hot-Water
Boiler and Coils.**

**BECAUSE IT IS THE
MOST RELIABLE HATCHER.**

It will hatch every chick that a hen will hatch. It is quite different to any other Incubator. It has the most perfect Ventilation. It has a current of pure air continually passing through the machine, but no direct draught. It does away with the dead in shell trouble. It has a chicken Nursery which the Chicks can reach without assistance, so that there is no necessity to stay at home when chickens are hatching. It costs no more than the ordinary Tank Machines to buy, and less than $\frac{1}{2}$ the cost to run. It has been the sensation of all the leading shows during 1908. It has been acknowledged by all the leading experts and Fanciers to be by far the most reliable and up-to-date machine on the market. In fact,

**IT IS THE BEST MACHINE
— IN THE WORLD. —**

Price—	£	s.	d.
70-Egg size	...	4	0
130-Egg size	...	5	10

Copy of latest Testimonial re "Triumph" Incubator received.

EPWORTH HOUSE, BANWELL, SOMERSET,
To Mr. W. LEA, January 12th, 1909.
"Triumph" Incubator Works, Birkdale.

DEAR SIR.—I have pleasure of informing you the "TRIUMPH" Incubator I purchased from you in November last has done exceedingly well seeing that it was a most difficult time of the year when the temperature in the room varied no less than from 41 to 53 degrees. I received the incubator on the 24th November, and on the 26th I put it in operation. On the 20th day, the machine hatched 42 chicks from a possible 49. On December 21st, I started the machine again with only 24 eggs, from which I have hatched 18 chicks, and one egg was added, which I think is very good, seeing that I am an amateur, and had never seen the inside of a machine until I got yours. Your new system of heating seems to me to be perfect. Wishing you the very best of success, which you will be sure to get when the "TRIUMPH" becomes known.

Yours respectfully,

W. H. COOME.

Write for my new Illustrated Catalogue post free. Address—

**WM. LEA, ROYAL INCUBATOR
WORKS,
BIRKDALE, SOUTHPORT.**

RHODE ISLAND REDS

THE "mortgage - lifting" poultry—now have a book worthy of the breed. This work tells where the Reds came from, gives the standard in full, and contains a wealth of practical facts. It shows the superiority of the Reds as business hens, for fanciers and as the best breed for farmers. Housing, feeding, attention when sick, etc., are discussed in a way that will help every poultryman.

At Last—Real Color Pictures!

In this book for the first time chickens have been pictured true to life. Every picture is from a photograph—a typical bird of each sex by the wonderful new French color photography. No oil painting can surpass these color pictures in beauty, and they are absolutely true to life. Such pictures in colors have been the dream of poultrymen for decades—in my book that dream has come true at last. Each of these color engravings cost over \$100 before a single perfect picture was secured.

HOW TO GET THIS BOOK, FREE.

Send me ten 2-cent stamps to help bear the cost of the book—it would sell in the regular way for at least fifty cents, so you'll get a bargain. Each copy contains rebate coupon good for 20 cents on your first order of me for two settings of eggs. When you become a customer, the book has cost you nothing—and until then 20 cents is a trifle compared with its value. Send now—edition is limited; no more can be made within a year! Don't miss it; order to-day.

**WALTER SHERMAN,
DONLON FARM, NEWPORT, R. I.,
U.S.A.**

RHODE ISLAND REDS,

Light Brahmas, White and Barred Rocks, White Wyandottes and Leghorns. Hardy, prolific, farm-bred, pure stock. For Birds moderate prices, or "Eggs to Hatch" at 10 cents each, write

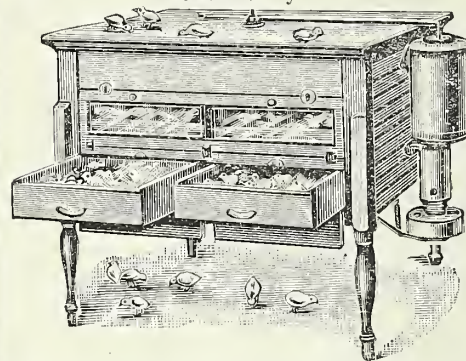
WALTER SHERMAN,

LONLON FARM, NEWPORT, R.I.

Free circular Booklet with COLORED
PICTURE TRUE TO LIFE.

GLEVUM NON-MOISTURE INCUBATORS AND BROODERS

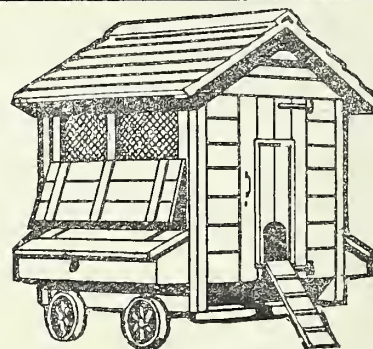
are sold on 60 days' free trial; they were the first Non-Moisture Machines to be manufactured in this country.



They contain all the latest improvements for successful artificial incubation, and are the most easily operated Machines on the Market. They are good, sound practical hatchers, built for the Practical Poultryman—the man who is in the business for profit. Illustrated Catalogue post free. Send for particulars of our Rock-bottom Poultry House, 6 ft. by 4 ft. by 4 ft., 21/- carriage paid.

Catalogue of every kind of Poultry House, post free.

**HORACE W. STEPHENS,
(Dept. H.)
Incubator Manufacturer, GLOUCESTER.**



No. 10a

Fowls' House on Wheels.

**THE BEST PORTABLE FOWLS'
HOUSE ON THE MARKET.**

Size 7 ft. by 5 ft. Made extra strong, framing mortised and tenoned, covered with Rustic jointed weatherboarding. Nests on each side. Flap at one side for light and air. Strong wood floor, lock-up door. Mounted on strong wheels and axles. Painted outside and lime-whitened inside.

**CASH
PRICE £4 15s. 0d.**

Sent Carriage Paid, in sections for bolting together.

Write for Illustrated Catalogue.

**BOULTON & PAUL, Ltd., Dept. G. 5,
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CLUBS AND SOCIETIES.

The Poultry Club.

The monthly meeting of the council was held on Friday, January 8, at 11.30 a.m., at the London Chamber of Commerce, Oxford Court, Cannon Street, London, E.C., when there were present Mr. W. Clarke (chair), Rev. T. W. Sturges, and Messrs. W. J. Harrington, F. J. Broomhead, W. H. Cook, P. H. Bayliss, W. W. Broomhead, R. Watson, W. Richardson, J. Horn, H. Wallis, W. J. Golding, W. A. Jukes, F. Bateman, A. Smith, W. M. Bell, Tennyson Fawkes, T. Threlford, A. C. Gilbert, and G. Tyrwhitt-Drake (hon. secretary and treasurer).

The following new members were elected: Dr. S. H. Snell, Glenshee Lodge, 261, Trinity Road, Wandsworth Common, S.W.; W. R. G. Groom, 31, Nealdon Street, Stockwell, S.W.; A. J. Ward, 7, Adelaide Road, Richmond; B. Rolph, Wellington Poultry Farm, New Malden; Fred King, Friars Cottage, Carmarthen; C. Venables Llewelyn, J.P., Newbridge-on-Wye, Radnorshire; J. G. Gaircliffe, Burwell, Cambridge; Thomas Glenn, 63, London Road, Retford; A. E. Walley, Cotton Abbots, Waverton, Chester; G. T. Drew, The Vailes, Haresfield, Glos.; Herbert Jefferies, Stanley Road, Warmley, Bristol; R. Sinton, Falcon Road, East Cowes, Isle of Wight; S. Hallam, Selsfield Lodge, West Hoathly, Sussex; James Clyne, Knappach, Banchory; Miss N. Moir, Woodside Farm, Aberdeen; John Wright, Udney Castle, Udney; George Pirie, Bank Agent, Ellon; Mrs. J. R. Moir, Cumings Park, Woodside, Aberdeen; Mrs. Florence Miller, Ivy Grove, Middleham, S.O., Yorks; J. W. Taylor, Jessamine Cottage, Riddings, near Alfreton; Percy Dobbin, Southlands, Northallerton; W. B. Etches, Little Coppice, Iver Heath, Bucks; N. J. Campbell, "Foresters' Arms," Holyhead, N. Wales; F. Mayle, "Ye Olde Curiosity Shoppe," George Street, St. Albans; L. H. Wace, Kingsland Lodge, Beaminster.

Several important questions were discussed, including new rose-combed varieties, the marking of chickens, medals for specialist clubs, and the Partridge Wyandotte Club and marking. It was decided that the club apply for a whole bay in the gallery at the 1909 Dairy Show instead of half as heretofore. Other correspondence was read by the hon. secretary, who was instructed to deal with it.

Correspondence.—Numerous applications for the collection of money due to members having been received, it was decided that a statement, printed in bold type, be inserted in the coming Year-Book informing members that the club cannot undertake the collection of debts except in the case of entry fees and prize-money due to members from shows. It was decided, on the application from the Kent branch committee for a ruling on the matter, that in the case of a firm consisting of two or more members who reside in different counties that the firm be allowed to choose which county (from those in which the different members of the firm reside) they will adopt as a permanent one (one only to be chosen) from which to qualify for radius specials and the county cup. A letter from Mr. R. T. Thornton, resigning his membership of the club, was received with great regret, and it was unanimously carried that he be elected an hon. member. Other corre-

spondence was read by the hon. secretary, who was instructed to deal with it.

The next meeting of the council will be held at the London Chamber of Commerce on Friday, February 12. The names of prospective members, with subscriptions (which are payable in advance), must reach the hon. secretary on or before February 4, or if the would-be member reside in a county having a county branch, through the secretary of that branch.

FREDERICK J. BROOMHEAD, Vice-President.

G. TYRWHITT-DRAKE, Hon. Sec. and Hon. Treas. Cobtree, Sandling, Maidstone.

Northern Utility Poultry Society.

Sir,—I enclose the manager's report of the laying competition for the three months to date. Pen No. 3 wins the special prize for the month (given by Mr. Joseph Foulds, of Nelson), with 69 eggs, and also gains first position. Two birds have been broody in pens 1, 4, and 14, and one each in pens 8, 13, 14, 24, and 25. The total eggs laid during the month is 695, an improvement on the previous month's total, and remembering that the very severe weather during the last fortnight prevented some birds laying, it may be considered fairly satisfactory.—C. Longbottom, hon. secretary, 28, St. Matthew Street, Burnley.

LAYING COMPETITION, 1908-9.

Results of 1st, 2nd, and 3rd months.

Manager, Mr. James Burrell, 132, Trafalgar Street.

Entry No.	Breed.	Eggs Laid.			Total points scored.	Remarks.
		1st month.	2nd month.	3rd month.		
3	W. Wyandottes.....	67	63	69	398	
1	W. ".....	80	63	49	379	98, 100 Broody
13	W. Orpingtons.....	76	58	39	341	81 "
8	Buff ".....	51	62	45	313	74 "
4	Buff ".....	45	65	51	311	21, 23 "
25	W. Wyandottes.....	48	40	47	257	87 "
22	S. ".....	32	40	48	240	
10	White Leghorns ...	44	29	31	207	
19	White ".....	47	24	34	206	
20	W. Wyandottes.....	13	20	56	178	
9	White Leghorns ...	29	22	37	175	
23	W. Wyandottes.....	32	20	30	160	46 Broody
11	Buff Orpingtons.....	36	32	2	140	
18	White Leghorns ...	24	17	12	105	
14	W. Orpingtons.....	10	25	17	103	67, 68 Broody
15	Buff P. Rocks.....	—	3	47	100	
6	White Leghorns ...	17	13	11	82	
24	Buff Orpingtons.....	25	1	15	82	64 Broody
2	White ".....	11	16	6	66	
7	Buff ".....	32	—	—	59	
5	Anconas.....	—	—	27	54	
17	White Leghorns ...	3	1	20	48	
16	Buff Orpingtons.....	14	—	2	28	
12	White Leghorns ...	4	—	—	8	
21	Buff Orpingtons.....	—	—	—	—	
Total eggs		740	614	695		

CHAS. LONGBOTTOM, Hon. Sec.

WM. WHITTAM, Assistant Sec.

United Ancona Club.

The following is the result of the voting:

President: Mr. J. Eadson, 22.

Vice-President: Mr. H. E. H. Way, 21.

Secretary and Treasurer: Mr. W. Snowden, 19.

Committee (6): Messrs. J. Eadson, 24; T. Layberry, 24; F. W. Ashby, 22; E. Kirby, 20; H. Rance, 19; R. P. Peake, 16; Beresford-Webb, 15; E. Isherwood, 15.

Club Judges (10): Messrs. H. Rance, 32; E. Kirby, 31; W. Snowden, 28; F. W. Ashby, 27; J. Eadson, 27; H. E. H. Way, 27; E. Isherwood, 26; J. W. Sykes, 24; R. Stainthorp, 19; G. M. Beresford-Webb, 16; nineteen others received votes.

Club Show Judge: Mr. J. Eadson, 15; E. Kirby, 8; six others received votes.

Club Show: Palace, 35. Thirty-six papers were returned.

The scrutineer was E. Comyns-Lewer.

Langshan Society.

Sir,—Mr. Bayliss (election secretary) reports that all the officers and retiring members of the committee have been re-elected without opposition, as follows:

President: Mr. G. Fielder.

Vice-Presidents: Messrs. J. Stirzaker and J. W. Walker.

Committee: Messrs. J. Horn, W. Isles, and J. Pickerill.

The other members of the committee are (to retire in 1910): Messrs. F. Alty, R. Clarke, and R. Cornelijs. To retire in 1911: Messrs. P. H. Bayliss, A. Baker, and C. J. Chapman.—Harry Wallis, Hon. Secretary and Treasurer.

The Black Wyandotte Club.

Sir,—The following is a correct list of the new officers of this club. Owing to certain changes it differs considerably from the list previously published.—M. Sybil Bury, Hon. Secretary, Lomber Hey, High Lane, Cheshire.

President: Rev. J. W. A. MacKenzie, 24 votes. (C. N. Goode received 27 votes but regretted inability to accept.)

Vice-Presidents: W. Hunter Gandy, 30; H. W. Buckland, 25.

Hon Secretary and Treasurer: Mrs. Herbert Bury (unopposed).

Committee: C. N. Goode, 35; Rev. E. Lewis Jones, 34; H. Bury, 33; B. Kirkman, 33; R. Cape, 32; W. M. Elkington, 30; P. Proud, 25; T. H. Furness, 24.

Club Judges: C. N. Goode, 45; H. W. Buckland, 34; R. Cape, 31; Rev. J. W. A. MacKenzie, 29; Mrs. H. Bury, 27; P. Proud, 27.

Club Show Judge: C. N. Goode, 21.

The Poultry Club (Yorks. Branch).

The following is the result of the voting for committee (12): Messrs. F. Tootill, 23; H. Bromet, 22; C. N. Goode, 22; R. Watson, 20; R. Stainthorp, 19; Will Moore, 16; C. A. E. Perfect, 15; C. Preston, 15; J. F. Entwisle, 14; T. Longbottom, 13; J. Turner, 13; W. F. Longbottom, 12. Ten others received votes.

E. Comyns-Lewer acted as scrutineer.

The Poultry Club (Middlesex Branch).

A committee meeting was held at "Nithsdale," Church End Finchley, London, N., on December 18, when there were present Mr. F. J. Broomhead (in the chair), Dr. Hampton Brewer, and Messrs. G. J. Bone, W. W. Broomhead, A. Burgess, D. Firth, T.

PROUD'S

FAMOUS POULTRY REMEDIES.

PROUD'S ROUP POWDER CURES ROUP AND GAPES.

Never known to fail.—This marvellous remedy has cured thousands of cases of roup, gapes, colds, and diphtheria; hopeless cases have been speedily cured, even after all other so-called remedies have failed completely. This wonderful remedy has no equal, and where used occasionally roup and kindred ailments are unknown. Testimonials from grateful customers reach us every mail. Sold only in 1/1 and 2/2 boxes.

LIVER PILLS.

The only reliable cure for liver disease and for birds out of sorts; also

CONDITION PILLS,

the finest pick-me-up for exhibition birds or for those recovering from colds or roup.

LEGWEAK PILLS.

The sovereign remedy for all cases of leg-weakness in growing chicks. Never fails to cure.

GOLDEN OINTMENT.

A specific remedy for comb disease.

TICK OINTMENT.

Thousands of chicks perish every season through being infested with these most troublesome pests. Do not wait until your chicks are dying, but send at once for a box of our world-famed Tick Ointment.

WHITE COMB CURE.

A certain and speedy cure for white floury growths on face and comb. Liquid for severe cases; ointment for mild cases.

CRAMP CURE.

Cramp and loss of leg power, so very prevalent at this time of the year, especially amongst artificially reared chicks, our world-famed powder quickly cures.

All the above remedies are put up in 1/1 and 2/2 boxes, post free.

PROUD'S GUIDE TO SUCCESS

in Poultry-Keeping will save you pounds, and costs only 3½d.

OVARY TONIC.

The world-famed egg-producer. Keeps birds in perfect health. 1/3 and 2/4 bottle.

Note Address—

PROUD & BROWN

*Poultry Experts,
SOUTHPORT
AGENTS WANTED.*

Firth, J. Argent, and F. J. S. Chatterton (hon. secretary). Expressions of regret for non-attendance were received from Messrs. A. Smith and R. J. Harrington.

After the minutes of the previous meeting had been read and confirmed, the secretary referred to the annual report, which will be printed and a copy of which will be forwarded to all members.

The election of officers was next proceeded with, and the following gentlemen were elected on the committee for the year: Messrs. F. J. Broomhead (chairman), F. J. S. Chatterton (hon. secretary), D. Firth (delegate), J. Argent, G. J. Bone, W. W. Broomhead, A. Burgess, A. W. Dance, T. Firth, R. J. Harrington, J. Smales, and A. Smith. Mr. W. Clarke kindly acted as scrutineer of the voting papers; the chairman, secretary, and delegate being elected by the committee according to rules.

Votes of thanks were accorded to Mr. W. Clarke, to the chairman, hon. secretary, and delegate.

Mr. B. Butler and W. Kendon were nominated for membership, while the election of Mr. Hunt was confirmed.

Several matters, including information regarding the Edmonton Fanciers' Society, a letter from Major Terry, specials for the Islington Fanciers' Society, and a complaint re Ealing Show, were referred to the council.

The meeting terminated with a vote of thanks to the chairman.

F. J. S. CHATTERTON, Hon. Secretary.

34, Elm Park Road, Church End Finchley,
Middlesex.

TRADE NOTICES.

Messrs. Walker's Diaries.

Messrs. John Walker and Co., the well-known manufacturers of diaries, ledgers, and so forth, send us samples of their loose-leaf books for review. These are extremely simple in construction and, at the same time, little liable to get out of order owing to the good quality of the paper used and the solidity of the rings employed to keep the leaves together. From the point of view of convenience, the chief feature seems to us to be that, when this form of book is opened for use, the leaves lie flat, and one is thus saved the thumb pressure so often required to keep the pages apart in a note book bound in the ordinary way. This system is, as the makers state, applied to all kinds of books, from the tiny note book for the waistcoat pocket up to the ledger for the counting house; and as the general scheme of arrangement and pockets, which has found favour in past years, is here retained, the combination of qualities is attractive enough to ensure a large sale. The headquarters of the firm are at Farringdon House, Warwick-lane, London, E.C.

The Tamlin Catalogue.

The nineteenth annual catalogue issued by Mr. W. Tamlin, of 40, St. Margaret's, Twickenham, is one of the most tasteful productions of its kind. Printed on the finest art paper, it is lavishly illustrated by half-tone blocks, representing not merely the incubators and other poultry appliances for which the firm is famous, but also many of the poultry establishments where these are in use. Thus there are attractive pages of views taken at Mr. Foulis's farm at Stevenage, Mr. W. M. Bell's Ringwood establishment, the Stocks Farm, Braintree (where the Utility

Poultry Club's Twelve Months' Laying Competition took place), M. A. Masson's farm at La Fert Millon, France, Reading University College Poultry Farm, and others too numerous to mention. The text consists of an introduction, descriptions of the Nonpareil incubator, brooder and egg-testing lamps, foster-mothers, etc., etc., and of a number of testimonials from all parts of Europe, including extracts from the Press. The book consists, in all, of 128 pages, and there is a sufficient index at the end.

"Glevum" Incubators at Street.

In the article that appeared in the January issue, dealing with progressive co-operation at Street, the writer omitted to draw attention to the fact that the incubators there in use are the "Glevum" non-moisture, of which at the present moment there are no fewer than sixteen 390 egg-capacity and five 150. Mr. H. W. Stephens, the inventor and manufacturer of the "Glevum" incubator, guarantees to satisfy each and every customer, and undertakes that the machine can be returned at the end of a sixty days' trial, when the full amount paid will be refunded without any deduction whatever. Mr. Stephens informs us that he has fitted up some of the largest poultry farms in all parts of the world with incubators and brooders, which have and are giving entire satisfaction.

Cooked Foods.

We have received from Messrs. White, Tomkins, and Courage, Limited, some particulars of their "Clarendo" cooked poultry foods, and among the advantages they claim for their specialities is that owing to the grain being cooked it is much more readily digested, and so passes more quickly into the bird's system; consequently it is performing the various functions of supplying the material for building up the waste tissue, forming bone, muscle, and fibre in growing stock, providing the means for egg production, and heat and energy necessary for the maintenance of health and vigour, and for fattening penned birds in much less time than when raw corn or meal is used. Full particulars can be obtained from the manufacturers at 48, Mark Lane, E.C.

Wicks Bros., Norwich.

Messrs. Wicks Bros., of Norwich, send us their catalogue of poultry appliances and garden requisites. As the owners of extensive poultry yards containing a great variety of fowls and pigeons, this firm is necessarily well acquainted with the practical needs of fanciers, and its list of houses, coops, and runs illustrated by drawings, shows many serviceable designs at moderate prices. Poultry and pigeon foods are also among their specialities, and they lay particular stress on a fattening meal for turkeys. They are the universal providers of everything connected with the poultry plant and the garden, including even—in the latter section—air guns, catapults, and the more innocent varieties of mechanical bird-scarers.

"The Shire of the Sea Kings."

Of the well-known series of travel books issued by the Great Western Railway, that on Devon, or "The Shire of the Sea Kings," has proved one of the most popular. So great, indeed, was the success of its first large edition, published in 1907, that a second edition has now been prepared, which will be found to contain the most up-to-date information as to the various places of interest and the way to get there.

The attraction of the shire as a holiday resort is not difficult to appreciate. Rich in historic memories and possessing a wonderful variety of scenery, it is nowadays so well "linked up" in regard to railway communication that the "time and distance" inconveniences of travel have practically vanished. The Great Western Railway system forms a network of lines over the northern, eastern, and southern parts of the county. In addition, the company's auxiliary services with motor cars and coaches cover most of the territory where there is no railway. This volume is typical of the modern transformation of the "guide-book" into a really literary production. It is, moreover, printed on art paper, and is exceptionally well illustrated by photographic blocks of excellent quality, constituting either a pleasant memento of a Devonshire holiday, an inducement to take one in this delectable part of the kingdom, or merely a volume of interesting topographic reminiscences which any devotee of "fireside" travel can thoroughly enjoy. Practical information on tourist-ticket rates, excursions, hotels, golf links and other sporting facilities is given in a series of appendices, a good map is provided, and the whole may be obtained, bound in a stiff paper cover, for the nominal—we were going to say ridiculous—price of threepence.

"By Surrey Lanes and Sussex Shores."

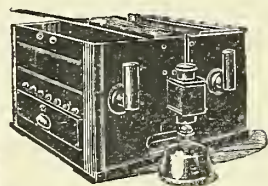
This handbook to the principal residential resorts on the London, Brighton and South Coast Railway is a crisply written and informative production on which the author and the company alike may be congratulated. Readers of this journal should find the booklet more than usually interesting, since it deals with several places that are closely identified with the poultry industry; we notice among many other illustrations, a view of Uckfield, which may be termed the metropolis of the Sussex fattening district, and the not far distant towns of Crowborough and Lewes are fully described and illustrated. From the wider standpoint, those parts of Surrey and Sussex that are tapped by the company's system are shown to contain an astonishing number of places which,

while easily accessible, are still unsophisticated. For the man who hesitates to go far out of town, Sutton and Purley are made to reveal little-suspected charms, while he who would pitch his tent farther down the line has a well-nigh infinite field to choose from, even if he rules out such popular sea-coast towns as Brighton, Littlehampton, Seaford, and St. Leonards, Bognor and Bexhill. A tabular list of season-ticket rates to or from better-known resorts will be found useful and reassuring by prospective emigrants to these counties, and a further feature of the book is a supplementary index to the building estates and estate agents, the hotels and boarding houses, the household removers and so forth, that are mentioned in its pages.

Some December Exports.

Mr. W. Tamlin's exports for December, 1908: Two 100-incubators to Mr. T. Cookson, Natal, South Africa, per ss. Norman. One 100-incubator, one 100-foster mother, and one bone cutter to East London, South Africa, to Mr. S. A. E. Jones, per ss. Goorkha. One 60-incubator and one 60-foster mother to Mr. S. A. Neale, Uniondale, South Africa, per ss. Galeka. One 200-incubator and two 60-foster mothers to Delagoa Bay, per order of J. Allen and Co., per ss. Goth. One 60-incubator and one Surbiton poultry-house to Mr. J. S. Swingler, Greece. Two 100-incubators and one 100-foster mother to Mr. L. Comon, Belgium. One 100-incubator and two 60-incubators to Mr. T. Clarkson, St. John's, Brunswick, per ss. Tabasco. One 100-incubator to Hong Kong, China, order of Army and Navy Stores, per ss. Tamba Maru. One 60-incubator to S. Sweetland, Jamaica, West Indies, per ss. Tagus. One 100-incubator to Mr. L. A. Joy, Trinidad, West Indies, per ss. Port Kingston. One 100-incubator and one 100-foster mother to Gibraltar, per order of Army and Navy Stores.

Mr. Arthur Ellett has recently exported to Australia, Switzerland, and the Continent seventy-one Black, Gold, Silver, White Wyandottes and Aylesbury ducks.



THE J.M.D. PATENT TREBLE FLUED INCUBATOR.

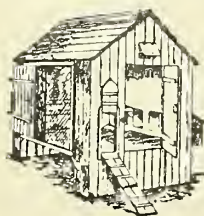
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